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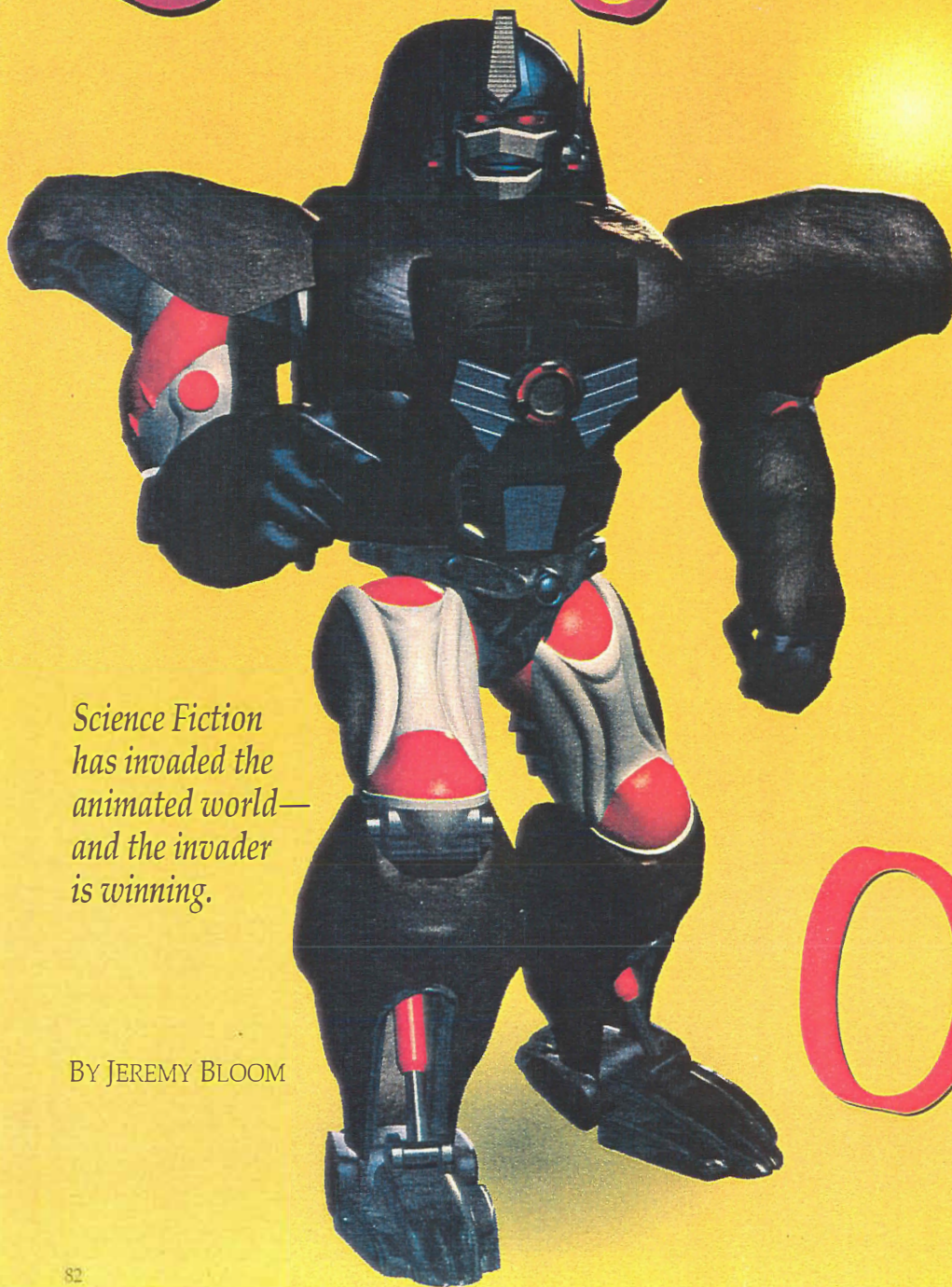
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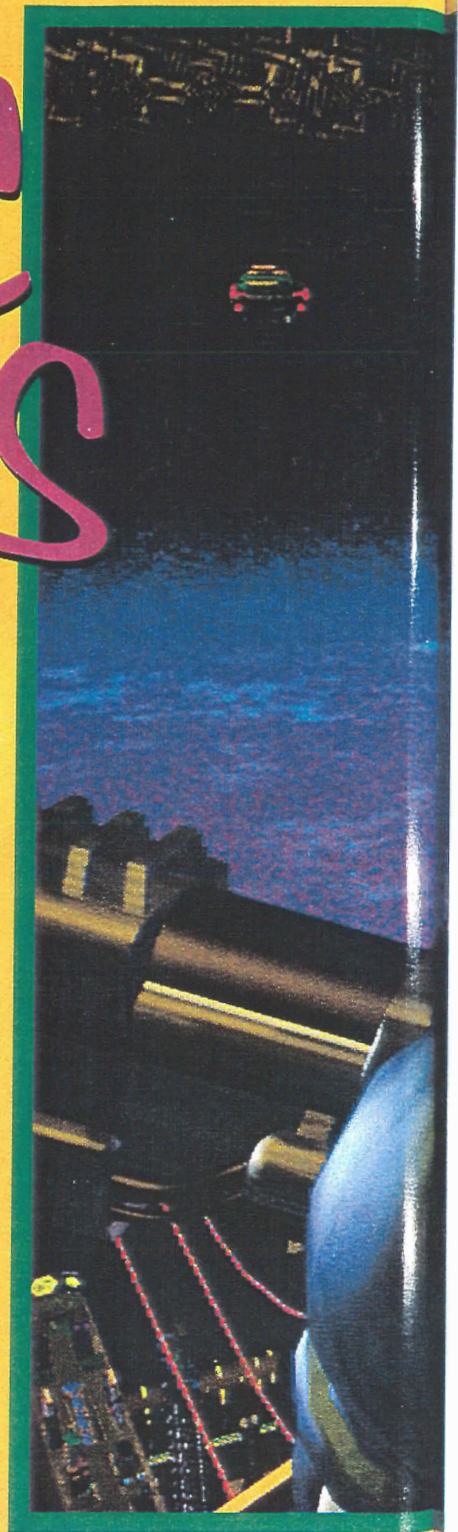
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COSMIC CARTOONS

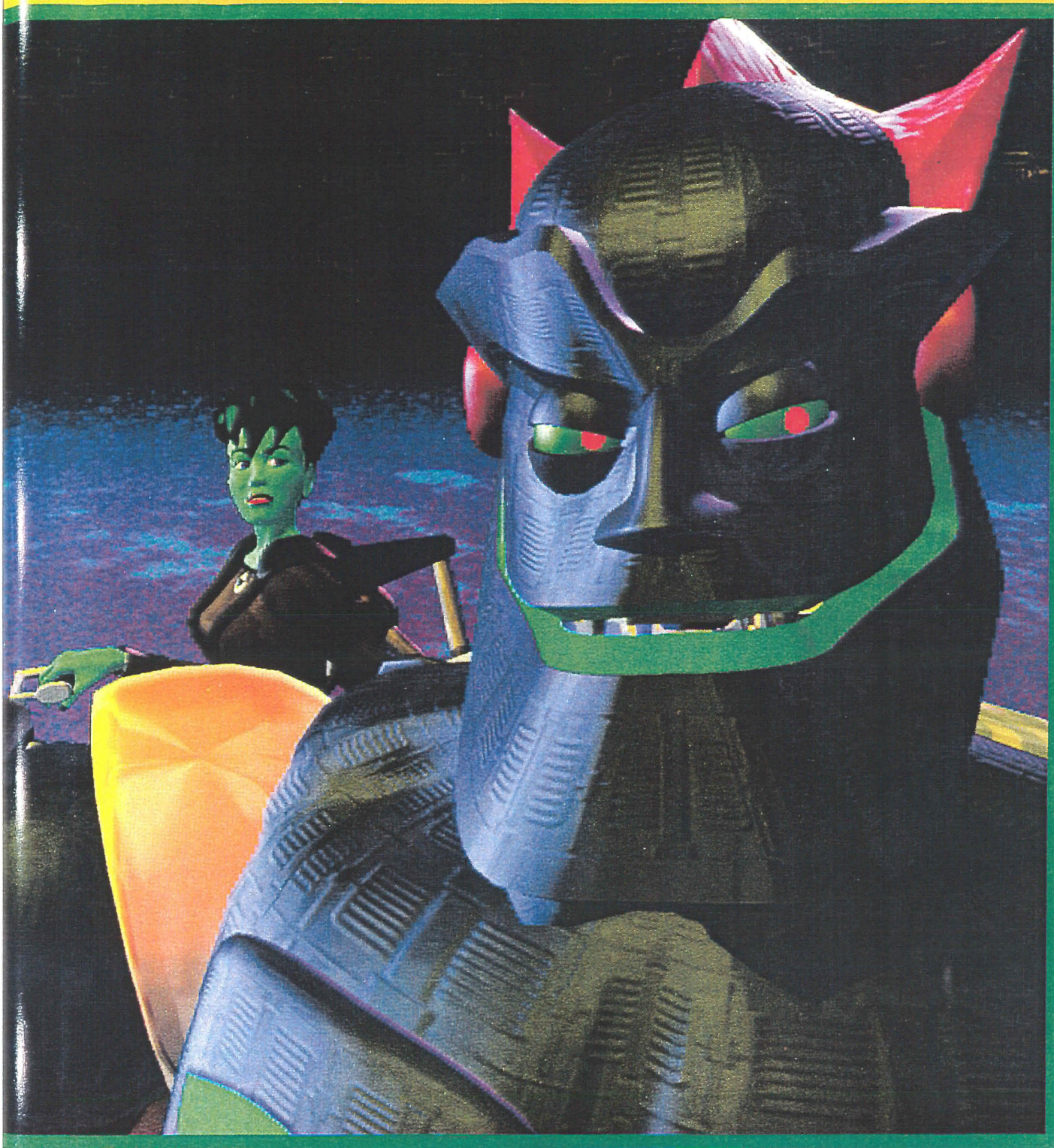


*Science Fiction
has invaded the
animated world—
and the invader
is winning.*

BY JEREMY BLOOM



Once upon a time, a trip to another planet required a flight in a rocket ship on very visible wires. In those dark days before special effects, before it was possible to make a *Star Wars*, a *Jurassic Park*, or a *Babylon Five*, the cartoon medium could take us — with ease! — on journeys to other worlds. From Marvin the Martian to George Jetson, cartoons were perfectly suited to the Sci-Fi genre. You can do fun things



with animation, such as keep a full-size samurai sword in a sheath on a calf-length boot. Or make transformers that really transform, in three dimensions, right in front of your eyes.

Despite this, there have been a lot more super-hero and funny animal cartoons over the years than Sci-Fi. But the 1996-97 season stands on the threshold of a new animated age. There are more Sci-Fi cartoons, running on more networks, than ever

before. And, while most of them are made the same way that *Bugs Bunny* and *Jonny Quest* were made back in the '60s — through the laborious process of hand-painting cartoon cells — we are seeing the first 'toons of the future, made with full computer-generated imagery also known as CGI.

Ironically, one of the first new shows to use CGI is, in part, a throw-back to the '60s.

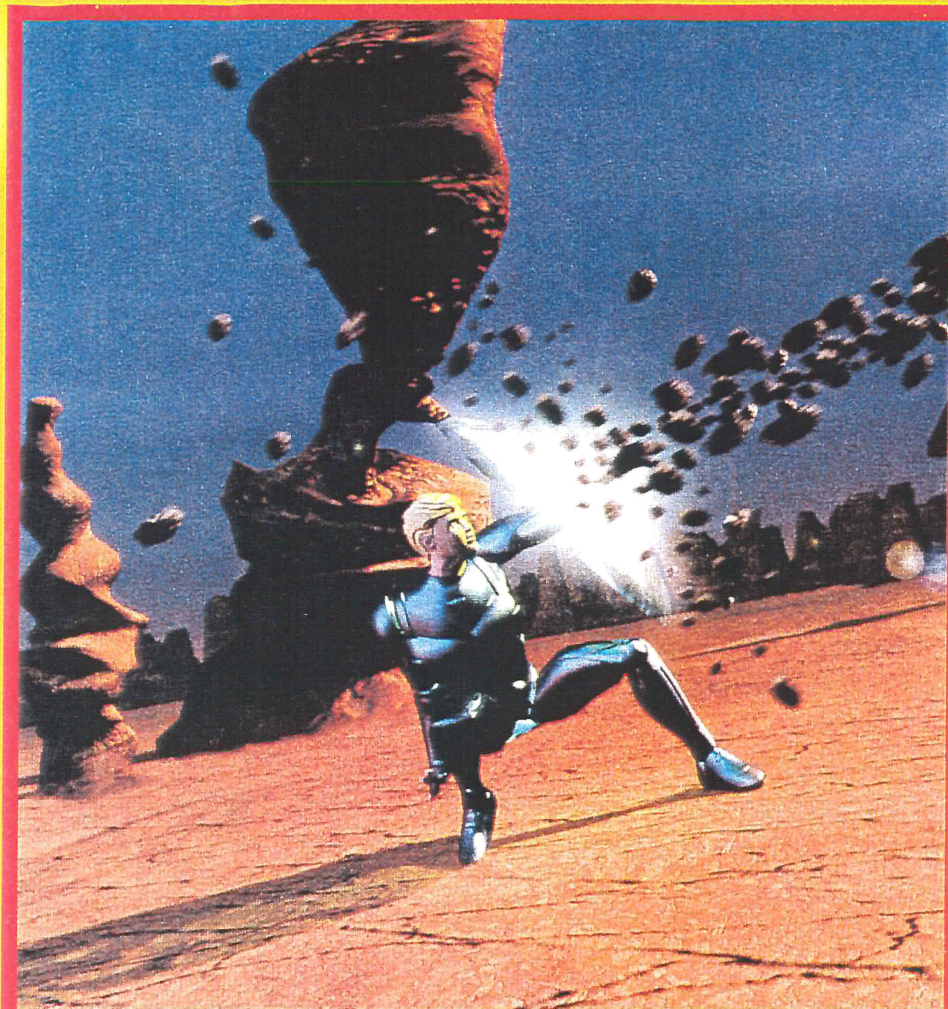
When it was first made in 1964,

Jonny Quest was part *Indiana Jones*, part *Twilight Zone*, part *The X-Files*. Today, *The Real Adventures of Jonny Quest* picks up a few years after the original left off, with a now teen-aged Jonny and his side-kicks tracking down everything from evil scientists to the Philosophers' Stone of Alchemy.

It is also ironic, considering the "Real Adventures" of the show's title, that the most interesting adventures take place in Virtual Reality. "Quest-

ABOVE: The evil Megabyte gloats as Dot looks on in a scene from *Reboot*.

LEFT: Optimus, of *Beast War*, an upcoming series from the *Reboot* creators.



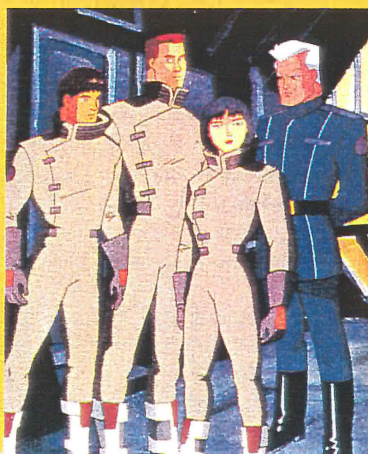
ABOVE: Jonny Quest moves from cels to computer animation when he enters the Questworld. BELOW: The crew of Wing Commander brings the excitement of Star Wars to animation. TOP RIGHT: The Wing Commander starships. BELOW RIGHT: Mad science rules in Dexter's Laboratory.

world" is a fancy-looking take on William Gibson's Cyberspace, accessed by a computer and some very funky wrap-around shades. The bad news for Jonny: the Quest family's personal nemesis, mad/evil scientist Jeremiah Surd, is a helpless cripple in the real world, but in Questworld he's a giant....

The show moves back and forth between the cell-frame animation of the "real world" and the computer-generated scenes of Questworld. On the real-world side, we get Scooby-Doo-style adventures, with "those darned kids" preventing the bad guys from doing the bad things that bad guys always want to do. But at the same time, in Questworld, things are a little more complex, and the bad guys are having it all their own way so far.

Speaking of mad scientists... Ted Turner's Cartoon Network has one of the funniest toons to emerge since Spielberg's *Animaniacs*, in *Dexter's Laboratory*. The premise: pre-teen boy

genius Dexter conducts an assortment of earth-shaking (and, occasionally, ego-enhancing) experiments in the vast laboratory that he has somehow managed to construct in his parents' suburban home. They don't seem to notice — this show takes the standard 'toon conceit of parental benign neglect and elevates it to an art form, as when dad gives little Dexter a present, which Dexter receives with the sort of joy that one normally reserves for gifts of weeks-dead fish or rock-hard Xmas fruit-cakes. "Thank you dad," says Dexter,

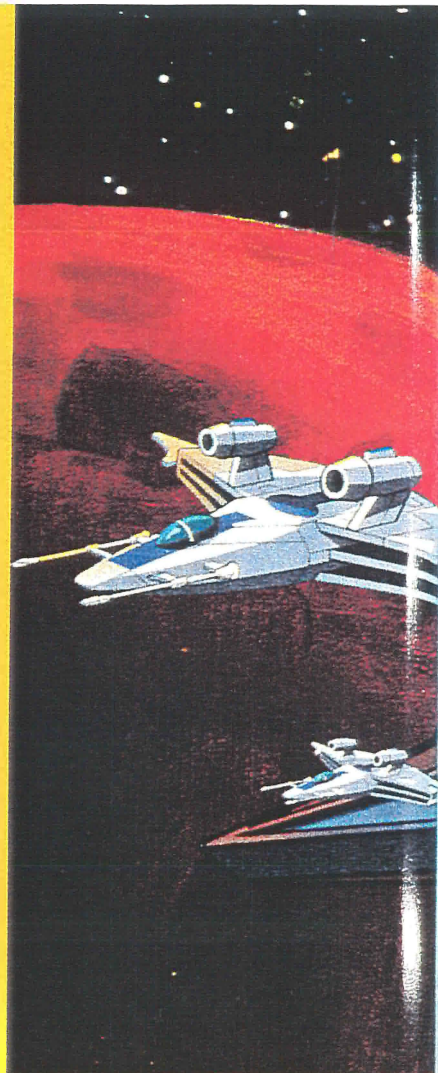


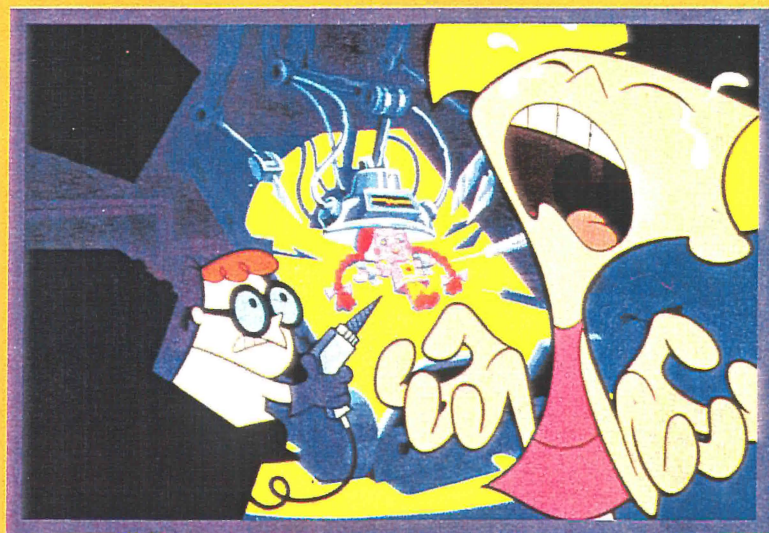
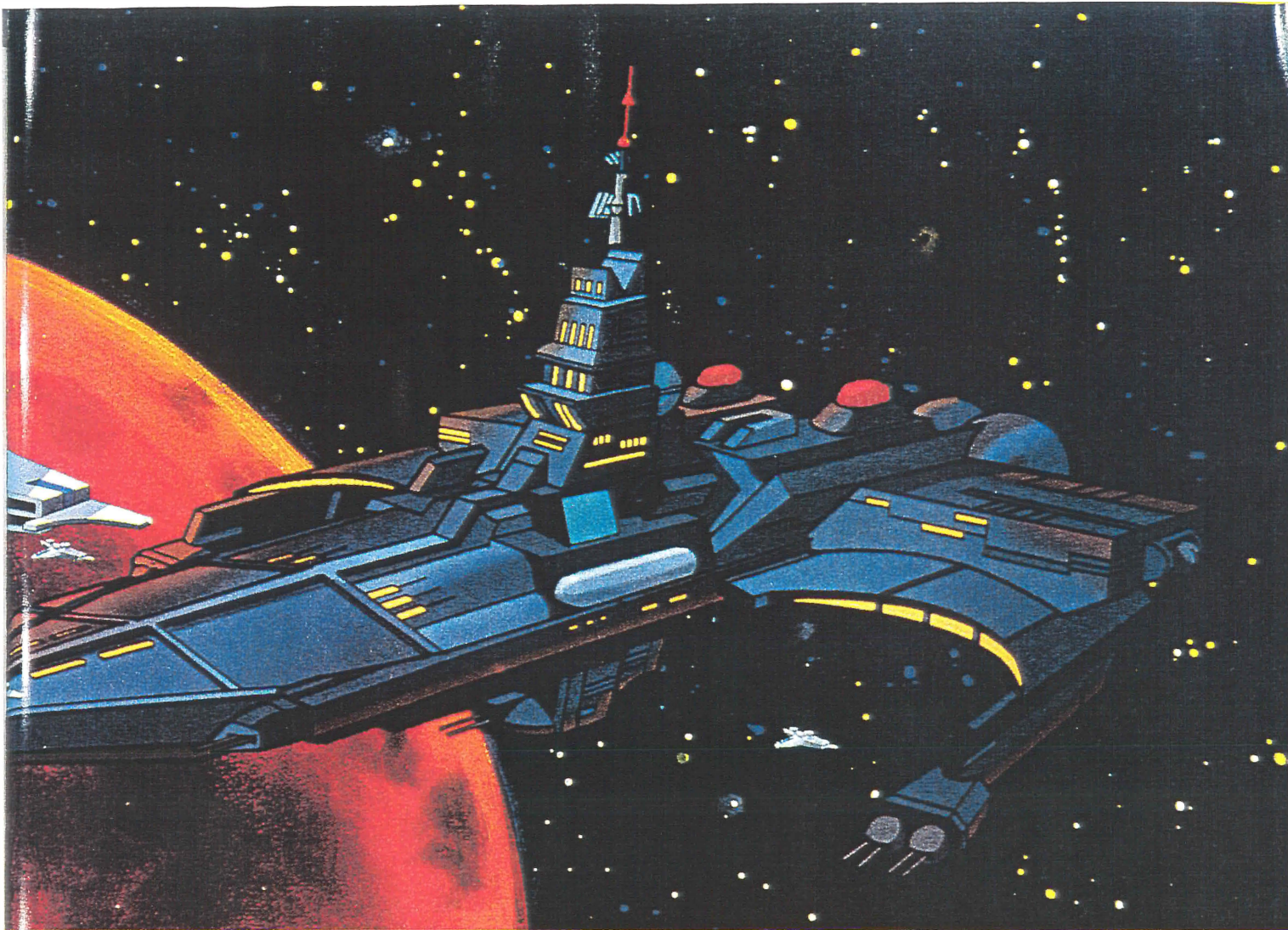
his voice dripping with sarcasm (in just one more gonzo twist, the kid speaks with a thick Carpathian accent). "A video game. An OLD video game."

As you would

expect in comedy, something always goes wrong in the work of this very young Dr. Frankenstein... often because of the meddling of Dexter's ditzzy older sister Dee Dee. The twist: it's just as often Dee Dee who saves the day. Yes, even ditzzy sisters can be heroes.

Dexter's Laboratory originated as a short subject, one of 48 *World Premier Toons* commissioned by this cartoon channel. The response was good enough that the network had creator Genndy Tartakovsky (a 26-year-old animation whiz-kid, someone worth keeping an eye on) crank out a whole series. Like all the best cartoon shows, Tartakovsky came up with some warped side-characters: Marvel comics fans will be amused by the familiar-looking chump superhero "The Infraggable Crunk"; "Dial M for Monkey" makes a hero of a chimp





(who goes out and tries to save the world while Dexter isn't looking... shades of *Pinky and the Brain*).

And speaking of chimps... we have several offerings this season on the Space Opera side of Sci-Fi, ranging from the fairly standard *Flash Gordon* (featuring the teen-aged Flash performing his usual solar-system-saving feats of daring-do) to the rather unusual *Captain Simian and the*

Space Monkeys. Solar monkey-shines? There's also *Space Ghost*, a near-Sci-Fi talk show that combines an animated host with live guests (ranging from the BeeGees to Weird Al Yankovic) and high-frontier weirdness *a la* *Mystery Science Theater 3000*; it's become a cult hit.

The most impressive of the Space Operas is USA's *Wing Commander Academy*. An ironic twist to the show

is that the computer game upon which this show is based broke new ground five years ago by filming live-action sequences with actors such as Mark Hamill and Malcolm McDowell and incorporating the footage into the game. Now, in bringing it to TV, they're going back to cell animation.

Mark Hamill

returns to do the voice of Maverick, a rock-solid hero type not unlike his Luke Skywalker in *Star Wars*. In the computer games, Maverick is a seasoned hero; the cartoon is actually a prequel, going back to the character's teen days in the Academy (shades of Wesley Crusher).

True science fiction fans may have a few problems with *Wing Commander*. For a setting of 2655, the science doesn't look that far advanced from what we use now. And the alien empire being battled looks suspiciously like a cross between *Star Trek's* Klingons and Larry Niven's Kzinti.

But overall it's a good effort, and they do throw in some nice touches: Maverick goes to a soda machine and



runs a swipe-card through the reader ("Hey, that's just today's tech") and the soda can materializes in front of him ("Uh... okay, we don't have the technology to do *that* just yet").

But without a doubt the coolest thing being done in SF cartoons — and possibly the coolest thing happening on TV overall — is *Reboot*.

This fully computer-animated masterpiece of a show ran on ABC in the U.S. two years ago, but then was bounced (possibly due to corporate buy-out politics). It's back this year in syndication in most major markets in the U.S. (in Canada, the show's home and native land, it's been running without a hiatus for the past three years).

It's very difficult to do *Reboot* justice with mere words. The whole

thing takes place *within* a computer; the characters are sprites and software manifestations in human and robot forms. The folks at Mainframe, the Vancouver-based company that produces the show with partner Alliance Communications, pretty much rewrote the book on CGI in order to make it happen, developing eight distinct computer programs that allow them to animate, render and edit faster than anybody else. Where it might take eight weeks or longer to produce a single 60-second CGI commercial, the folks at Mainframe can crank out a 22-minute episode in that same eight weeks, with the same level of detail, realism, and sense of "gee-whiz".

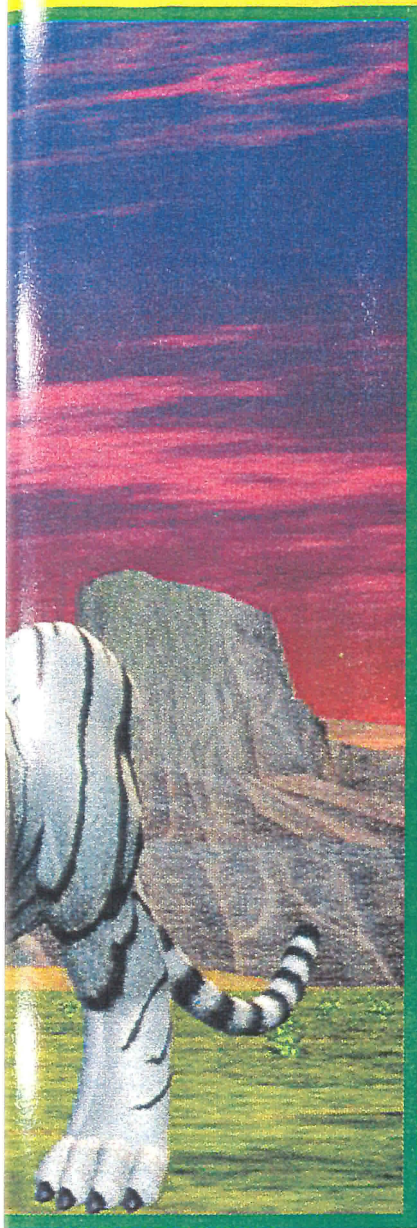
When you see *Reboot*, you can't help but feeling "wow." This isn't a cartoon — it's art.

No stiff shots of stony faces, immobile except for wagging jaws. No bor-

ing *Yogi Bear*-style running sequences where the legs move and background scrolls around and around while the bodies sit in the same place on the screen stiff as statues.

Reboot's character's have facial expressions, muscles that move smoothly under their glossy uniforms as they walk, surface textures (and sometimes they're not *real* surface textures, which is even cooler). The action (and there is a *lot* of action) all happens in three dimensions. It's all very, very... *cool*.

Fortunately, they didn't just hire computer programmers and artists — they also hired writers. The shows have action, and also nice little "human" touches; they've got a wicked sense of humor, too. The title to the show "Trust No One" flashes across the screen in green, glowing letters that will be familiar to the fans of a certain rabidly pop-



a lovely green) Data Nully... you get the picture.

Having interesting, believable characters makes a big difference. *Dexter's Laboratory's* Genndy Tartakovsky says character is the make-or-break factor in successful animation. "If you look at *Toy Story*, what really works is that it still has good character-acting in it." The cartoon shows that have attracted the greatest following — like *Dexter*, like *Pinky and the Brain*, like *Jonny Quest* — have tended to be the ones with really well-defined characters. *Reboot* has that; *Wing Commander* may need to work a little more.

These current cartoon creators have gone pretty far afield to pull in some outstanding talent to provide the voices for this year's crop. Jerry Doyle (Garibaldi on *Babylon 5*), Michael Dorn (*Star Trek: Deep Space Nine*), and Malcolm McDowell (famed for assorted villains) put the words in the mouth of Captain Simian and his crew of spacefaring monkeys. The voice of the young Dexterstein probably won't be as readily recognizable — it's Christine Cavanaugh, who provided the vocals for *Babe*, the Oscar-nominated pig. The Jonny Quest voice is provided by J. D. Roth, familiar to fans of such kid TV gameshows as *Masters of the Maze* and *Fun House*, while Jonny's dad, Dr. Benton Quest, is veteran character George Segal (whose credits range from *Who's Afraid of Virginia Wolfe?* to last year's *The Mirror Has Two Faces*). And who better to have on your side as body-guard Race Bannon than Robert Patrick (the T-1000 in *Terminator II*)?

The Mainframe/Alliance folks have another series on the air this year, too — *Beast Wars*. Using the same technology, they have taken the "transformers" concept and made it

LEFT: Airazor and Tigertron are two of the colorful villains to be featured in the upcoming *Beast War*. BELOW: Dot, Enzo and Bob are the computerized leads of *Reboot*. RIGHT: *Reboot's* Dot in action, aboard one of *Reboot's* many gizmos.



ular Sci-Fi show... later, we meet a couple of "special agents" of the operating system: a drawling droid named Fax Modem and his red-haired green-eyed (like all the other droids she only has one eye, but it's

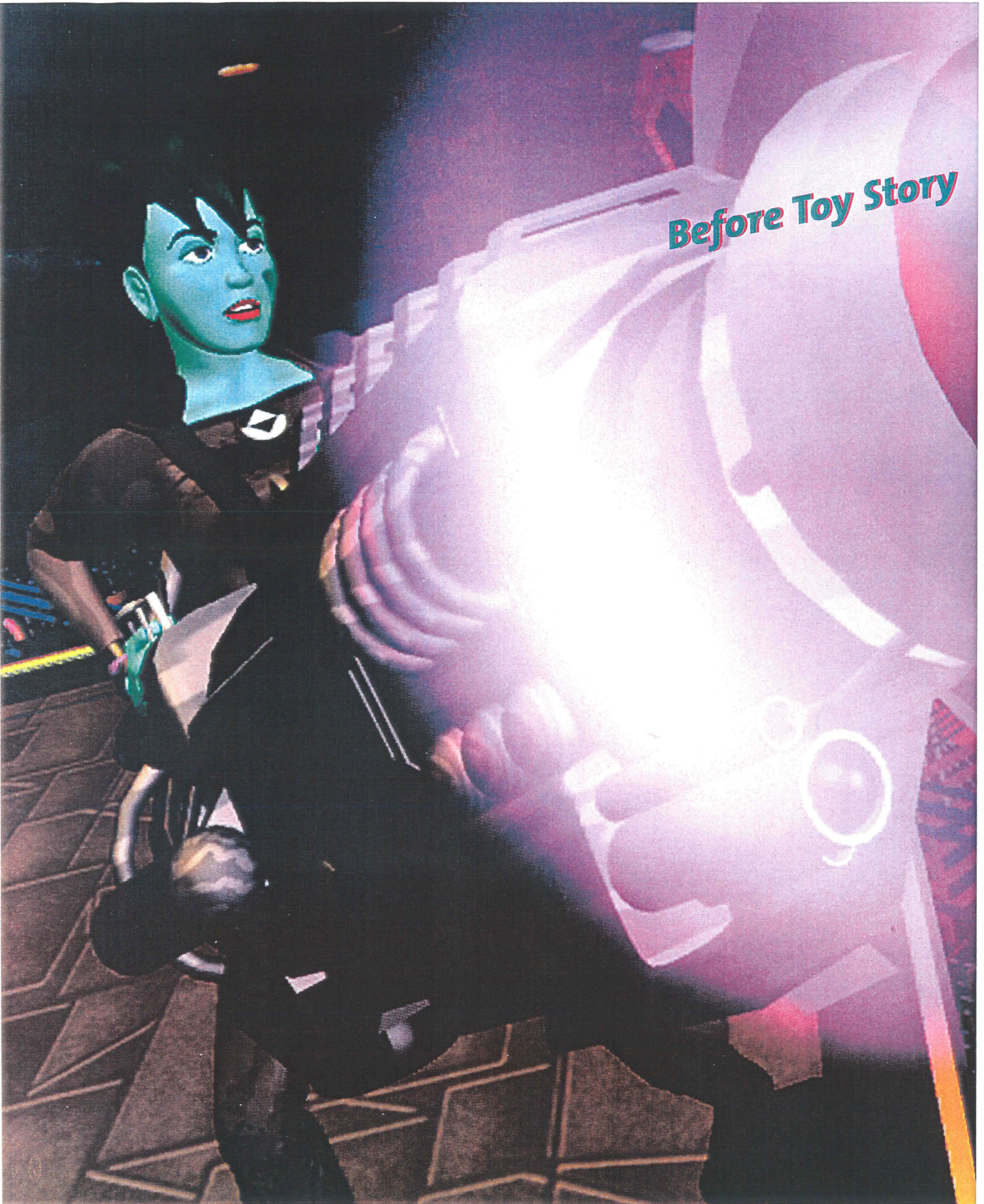
actually fly — robots that transform in to animals and dinosaurs. And they're also at work on an animated feature for Imax, based on the *Reboot* characters.

Over the next few years, watch for more shows like *Reboot* — as the technology continues to multiply, companies like Hanna-Barbera are bound to go over to an all-CGI format. Why not? It looks spectacular, and the folks at Mainframe claim their costs are already comparable to cell-frame animation. We could be on the brink of a new Golden Age of animation.

Stay "tooned" for further developments. ■



Before Toy Story



there was...

ReBoot

By Rogier van Bakel
Photograph by Karen Moskowitz



www.wired.com/5.03/reboot/

Out of the
craniums of
Phil Mitchell,
Gavin Blair,
and Ian Pearson
(from left) come
characters like
Dot Matrix, who
can pack more
than a punch.

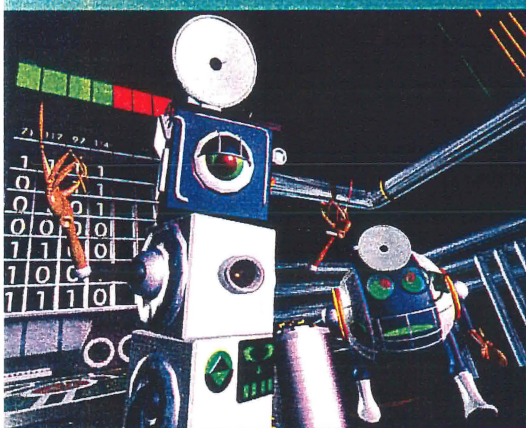
When *Toy Story* exploded onto movie screens in the 1995 holiday season, the Disney folks weren't the only ones holding their breath and keeping an eye on box office numbers. In a nondescript office building in downtown Vancouver, British Columbia, a few expatriate Brits were trying to decide if they should greet the film's success with cheers or reservation. *Toy Story* is hard not to like, especially if you're a fan of state-of-the-art computer-generated animation. These men were more than just fans; they were veterans. Almost a decade earlier, Ian Pearson and Gavin Blair had animated and directed a milestone of the genre: Dire Straits' *Money for Nothing* video. Despite the video's boxy, stiff-limbed characters –

an artifact of the limited computing power of the day – *Money for Nothing* pushed the vernal art form of CGI (computer-generated imagery) further into the cultural consciousness than anything before it. It gave Pearson and Blair, along with fellow animator Phil Mitchell, who joined the team a few years after the Dire Straits video, the impetus to consider doing something far more ambitious. Soon they were kicking around ideas for making the first television

Story by a good year. Still, in terms of exposure, John Lasseter's film easily stole *ReBoot's* thunder – which turns out to be something of a sore spot for the British team. They've nothing bad to say about the film. On the contrary: it was good; it was a success; and what's good for computer animation is good for them too. But talking to any one of the three creators

matters who crosses the finish line first. Quality is what matters. And in this category, *ReBoot* and *Toy Story* are in the same league. While no one would mistake *ReBoot's* story lines and dialogs for the work of David Mamet, they're humorous and entertaining – and the result of a propeller-head sensibility that can make the show exasperating to watch for anyone who doesn't happen to think that computers are way cool. *ReBoot* is a

CD-ROM, as well as a new title based on the old *Tales from the Crypt* comic books. "For me, it's about the same jump in quality and sophistication that you get when you've been watching Hanna-Barbera cartoons like *The Huckleberry Hound Show*, and then you see *Astro Boy* or *Speed Racer* for the first time. There's a richness to *ReBoot's* images and a variety in the facial articulation of the characters that's just a step ahead. I frequently



Inside the world of Mainframe roam robotlike binomes, the archevil Hexadecimal, and good guys like Bob and his wannabe Enzo.



animation series made entirely with computers.

After much creative stewing and an arduous search for investors, the result, a children's TV series called *ReBoot*, debuted on North American screens in 1994 – beating *Toy*

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will likely bring out a casual mention of this feat: just one season of *ReBoot* episodes – 16 shows – means producing almost 320 minutes of CGI. "Compare that with the maybe 10 minutes of CGI in *Jurassic Park*," says Phil Mitchell. "Or with *Toy Story*, which runs about 80 minutes. That movie took years to do, too. We can now do two episodes in under six weeks."

But as long as animation is not an Olympic sport, it hardly

3-D roller-coaster ride unlike anything that's been shown on TV before – with this quality and in this quantity. There's plenty of fast-paced action, dizzying camera angles, and other eye candy to keep kids riveted.

"I think what they do is enormously impressive," says Jim Ludtke, the cutting-edge animator who is responsible for *The Residents' Freak Show*

say, "How'd they do that?"

The fact that *ReBoot* is made entirely on computers (cratesful of high-end Silicon Graphics workstations) is not really what sets the show apart. Nowadays, most of the traditional-looking animation shows leave the tedious task of inking and coloring to computers. Often, animators draw images digitally, using an electronic tablet and stylus – eliminating paper or acetate cels entirely. So what distinguishes

ReBoot? It's the lifelike 3-D effects, obtained with obvious animation talent and gobs of raw processing power. And *ReBoot's* type of computer animation yields creative and production advantages that nothing else can match. "If a traditional animator draws a scene and then decides that a different angle is called for –

ReBoot, Mainframe Entertainment Inc., with its team of some 70 animators, has written proprietary software, which it uses internally and doesn't sell. The company also has some product spinoffs, including the development of IMAX rides: 18-seater vehicles

ReBoot feature film, about which everyone is intriguingly tight-lipped.

"The terrible thing about 3-D computer animation is the enormous investment you need to get started," says Blair. "The wonderful thing is that once that's behind you, new projects are so much easier to get off the ground

threatened by two viruses, the megalomaniacal Megabyte (Darth Vader meets Dr. No) and Hexadecimal, a long-legged chaos queen, just this side of kinky, who dons Kabuki-like masks to reflect her changing moods. These villains strive for nothing less than domination of the entire Net.



or three different angles – he has to start all over again," cocreator Blair points out. "But on a high-end workstation running Softimage, you just go click-click-click and you have your three new angles."

As a byproduct of doing

mounted on hydraulics that move according to visual cues from the *ReBoot* TV show on the 180-degree wraparound screen. In addition, in fall 1996 the *ReBoot* team launched a second CGI show called *Beast Wars*, a surprisingly blunt SF series about two battling intergalactic robotic tribes. Finally, there are plans for a

because everything you need is already in place."

Binomes and data sprites

ReBoot takes place in a multi-level city called Mainframe, which exists in the innards of a PC. The city's inhabitants, robotlike *binomes* and humanoid *data sprites*, are

Leading the defense against them is Bob, a *guardian* with silicon-colored hair and no short supply of courage. Dot Matrix, the smart entrepreneur who runs Dot's Diner, is Bob's trusted ally. Dot's kid brother, Enzo, idolizes Bob and attempts to emulate him – with mixed results. The one main character who is 196 ▶

ReBoot

◀ 153 never seen nor heard is the User – that’s you – who runs the programs that keep the binomes busy. (Who did you think does all that work when you launch a word processor or a spreadsheet?) Every now and then, the User drops a bombshell on Mainframe in the form of a cube that represents a computer game. The dapper sprites must fight the User unto the death – or at least until he or she quits the game and calls it a day.

True to much of animation’s legacy, grown-up references are sprinkled liberally throughout each *ReBoot* episode. Hip nerd humor is very much in evidence. A waiter who puts his restaurant’s trash in a dumpster is heard to mutter “Garbage in, garbage out.” Other geek gags allude to *Star Trek*, bar codes, and similar totems of the digital lifestyle. One show features the appearance of two earnest investigators, Data Nully and Fax

with little dimensional depth, just like the *Money for Nothing* video. Such were the technical boundaries of computer rendering in 1986, when *ReBoot* was conceived on the proverbial napkins and beer coasters. Blair explains: “We had to put ourselves in the shoes of the viewer and ask, ‘Why does it look like this?’ Well, it’s inside a computer. But why are there no shadows?” Um, it’s inside a computer. Then of course, as the technology advanced, the show started looking the way it does now, all shiny with rich textures and natural-looking body movements. The reason for the show taking place in some kind of digital fairyland became less pressing. But the whole thing had already been set in motion, and we figured, What the hell, it’s a great idea, let’s just go with it.”

That it took almost a decade to bring *ReBoot* to the television screen was fortuitous for another reason: it would have been a marginal series delighting a small

front man, Andy Partridge. In the rock star look-alike department, Mitchell would do a good job passing for former Hüsker Dü member Bob Mould. There’s an intensity about him that makes it easy to picture him banging out dissonant guitar chords with abandon, though in reality Mitchell is more likely to be found hunched over a computer screen, tweaking an animated character’s features to perfection. Like Blair, he received top honors for the computer-animated commercials he made during the London part of his career. We’re soon joined by the third member of the *ReBoot* triumvirate, Ian Pearson, who appears to be the most businesslike of the bunch. Then again, he’s hardly your average corporate drone. His heavy Geordie accent – Pearson is from Sunderland in the northeast of England – sets him apart from the crowd. In a display of his assimilation into North American culture, Pearson wears a baseball cap.

The reason the *ReBoot* team ended up in Vancouver, in early 1993, is simple: money. Importing pricey computer workstations and high-end video equipment to England to start up the show was not an option. The gear would have been twice as expensive as in North America, after shipping and middlemen markups. “And an office building in London similar to the one we have here – forget it,” says Blair. “You’re talking millions of pounds.” The team didn’t want to move to the obvious alternative, Los Angeles. What was the point of giving up one smog-filled metropolis for another?

Then a colleague suggested Vancouver, and Pearson went on a reconnaissance mission. Recalls Blair: “Phil and I got this phone call in the middle of the night from a very drunk Ian: ‘Ooooooh Vancouver is beautiful, you’ve got to come and see it.’ So we all packed our bags and came here, despite the fact that back in England everyone thought we were insane. After all, Canada was just for mounties and polar bears.”

What the animators found was a great place to do business: a bustling, international creative community – not to mention a government that gives substantial tax breaks to foreign businesses that provide employment. Grant money and other subsidies for artists have long been 198 ▶

ReBoot would have been a marginal series delighting a few übernerds just five years ago. In today’s wired world, it took off.

Modem, who unfold conspiracy theories that prompt an incredulous Bob to ask if the duo is “completely random.” It is a clever takeoff of *The X-Files*’s Scully and Mulder, with the “real” Scully, actress Gillian Anderson, providing Nully’s voice. Such pop-cultural allusions abound, some aimed at 6-year-olds, others at boomers. (An episode called “Talent Night” spoofs the Village People.) “I love how they turned the show into a pretty slick manifestation of geek stuff that they’re managing to slip into the mainstream,” enthuses Jim Ludtke.

If Mitchell, Blair, and Pearson (and the show’s fourth initial creator, John Grace, who stayed in England) had developed the idea for *ReBoot* a few years later, it would have been a different show with radically different digital scenery. That *ReBoot* takes place inside a computer, explains Blair, was intended as a convenient excuse for the look they thought the show was going to have – squarish,

group of übernerds just five years ago. Not until the developed world became seriously wired, and home computers reached critical mass, could the show become the success it is today. It’s now been sold in more than 50 countries. “It makes more sense all of a sudden,” concedes Mitchell. “Everybody is into computers, and everybody has a PC.”

The gang at Dot’s Diner

For the benefit of their guest, Gavin Blair and Phil Mitchell have temporarily abandoned their workplace – a labyrinth of messy offices outfitted with millions of dollars worth of high tech machines – and are happily drinking ale at a Vancouver seafood restaurant. Blair, who is neither tall nor fat but somehow manages to come across as a hulking Boy Scout in his shorts and Doc Martens, is the most outspoken of *ReBoot*’s top animators. With his small round glasses and mischievous smile, he’s almost a dead ringer for XTC’s

ReBoot

◀ 196 part of Canada's cultural fabric, and the animation business, among others, has been allowed to experiment and expand as a result. Vancouver, thanks to its agreeable weather and its relatively close proximity to Hollywood and Silicon Valley, has found itself playing host to a growing movie and animation scene.

Another problem: ABC executives insisted that Dot's chest be completely desexed – into a monobreast.

Through the early 1990s, money had been very much on the team members' minds. "You can't just knock out a pilot for a computer-generated series, and then if people like the pilot, you do the show," Blair says. "Because to buy all the gear, build all the models, all the characters, and all the sets to do a pilot – that's an enormous investment. You've got to do 13 episodes or none. Also, the people

we asked to sink millions of dollars into the project were a bit jittery because they weren't sure we could do it. We couldn't prove we were up to the job because nobody had ever done something like this before. So for them, it was a big leap. A huge gamble."

In 1993, ABC TV said yes. So did YTV in Canada, as well as Limelight, an international film and video production company. The

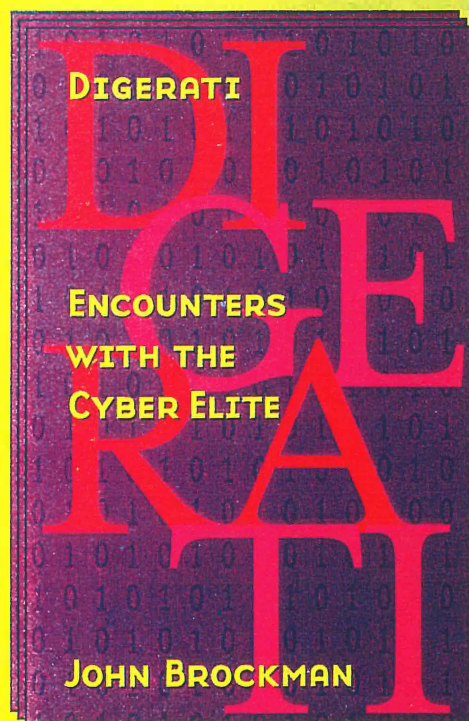
season, they say now, was too frenetic, too fast-paced. "We wanted to put everything into the first shows," Blair says. "We had this huge cast of characters. We had three heroes, two villains, their sidekicks, plus all the ancillary characters. We had a city to explore. These days, we've got a better handle on what we're doing. So we have 21-page scripts instead of 44-page ones, and we don't try to do too much in any one show."

Another problem that had to be overcome was ABC. The network's own internal Broadcast Standards and Practices unit (BSP) raised objections to many a *ReBoot* script. Few of those admonitions carried much merit and some defied common sense, according to the show's creators. (The people at BSP and ABC's public relations department repeatedly declined to talk to *Wired*.) "We can generally see the logic to what BSP is trying to do," says Blair. "If you have a kid run through a plate-glass window on TV and he's OK, you might find that actual little kids start running through plate-glass windows thinking they'll be all right. It

Brits were in business, but in some ways, their troubles seemed to have just begun.

Battling a Hexadecimal

Now the *ReBoot* team had to deliver. Their inexperience showed when, well into production of the first script, they discovered it was about 100 percent too long and they were forced to make cuts that didn't help the clarity of the plot. The whole first



A natural salonkeeper and provocateur, Brockman rubs heads together until they produce heat and light. **STEWART BRAND**

John Brockman has an uncanny way of knowing people who know something important, and a talent for putting those people together. **HOWARD RHEINGOLD**

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can't hurt to have someone point that out to you so you'll be extra careful and responsible."

But ABC's disapproval focused mainly on sexiness and interpersonal violence. The network was under the gun. Just weeks after it agreed to finance and air *ReBoot*, one of the network's executives told Congress that ABC proposed to create a safe haven for children on Saturday morning. The fact that Disney later acquired ABC didn't do anything to soothe the *ReBoot* creators' nerves. "We'd just sold ABC an action adventure show, and now we couldn't even have a punch-up because that was violence," says Blair. "Also, we couldn't have jeopardy. Meaning we couldn't end an act with Bob falling off a cliff and him yelling 'Aaaaahh' as we cut to a commercial – because that's jeopardy, and we'd upset the kiddies."

The *ReBoot* team was particularly baffled by the directives it received concerning sexual content. It's a safe bet that even dirty-minded lechers would not find much titillation in *ReBoot*, but ABC, apparently, begged to differ. BSP insisted

that Dot's shapely figure be toned down. Never a particularly large-breasted character to begin with and never one to expose much cleavage, Dot's chest had to be completely desexed. "So she acquired this longish horizontal lump on the front of her torso," muses Blair. "Her breasts sort of come out at the side and then go straight across the front without a hint that there are two of them." The animators started merrily referring to this peculiar accoutrement as Dot's monobreast.

It wasn't always so funny. When Dot, for once dressed in a long, glamorous gown, sang to her kid brother on his birthday, the script called for her to sashay over, wink, and give him a sisterly kiss on the chin. ABC wouldn't hear of it. "It was obviously incest," Blair says BSP told him. "We were implying an incestuous relationship between brother and sister." Pearson pipes up, and his Geordie accent is suddenly steely. "I can't honestly get my mind to think in those terms. I think that's one of the sickest things I've heard. Those people, how do they sleep at night?"

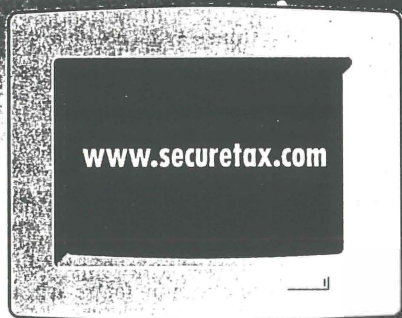
Things didn't get any better when,

according to Blair, BSP outlawed the word *hockey* on the grounds that it's apparently slang for a mixture of semen, urine, and feces. Next they outlawed the term *wuss* because it is not just "a weak, cowardly, or ineffectual person," as the dictionary might have you believe, but a vulgar word meaning "wet pussy" – or so BSP claimed.

There was not much love lost between the *ReBoot* team and ABC when they parted company after just two seasons. Thankfully, the fans didn't suffer. More than 100 independent TV stations throughout the United States subsequently purchased the right to show the series. (For a list, see www.inwap.com/reboot/Cluster.html.)

Pearson says that there's an upside to the separation from ABC; *ReBoot* has started to fulfill its potential. "I think the third season is blowing the first two out of the water. We haven't gone hideously violent or anything like that – it's just more action-filled and fun-filled."

And, no doubt to the horror of a handful of moral guardians, Dot's monobreast is now in stereo. ■ ■ ■



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The Financial Post Magazine

December 1996

When the bottom line depends on prepubescent minds, business is anything but child's play

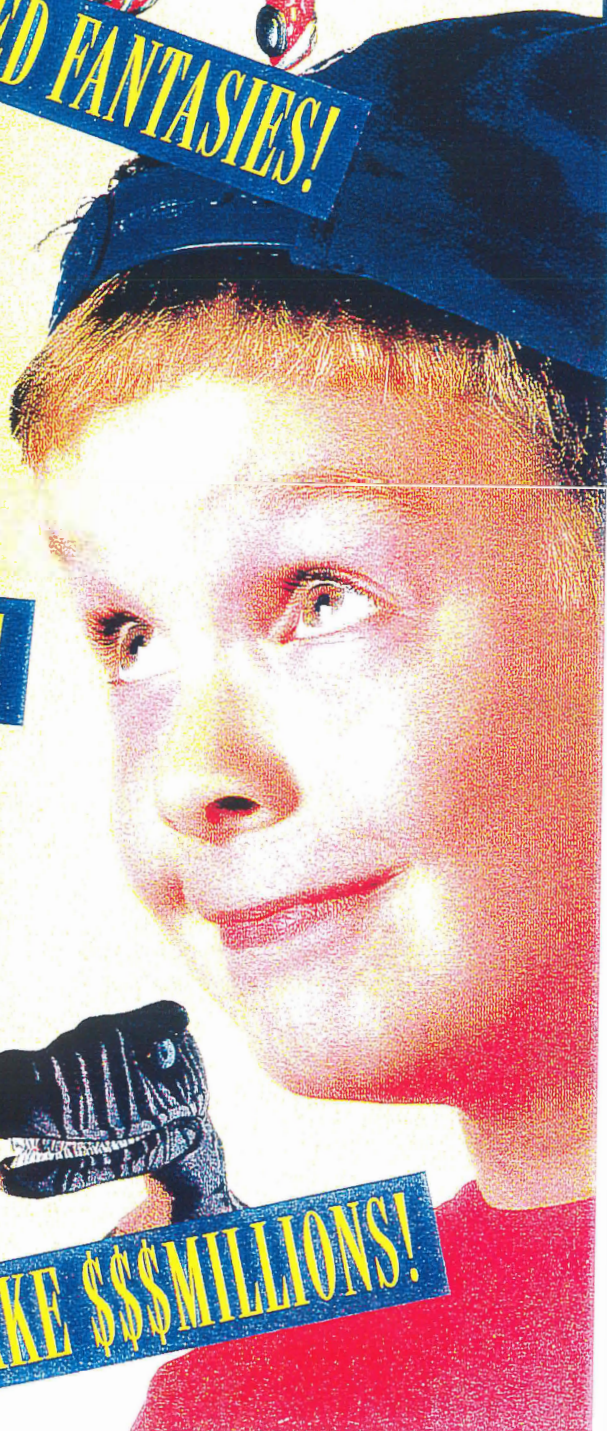
REAL LIFE

FEED FANTASIES!

TOY STORY

POWER MARKET!

MAKE \$\$\$MILLIONS!



Inside the very serious business of making megabucks out of kids at play

TOY STORY

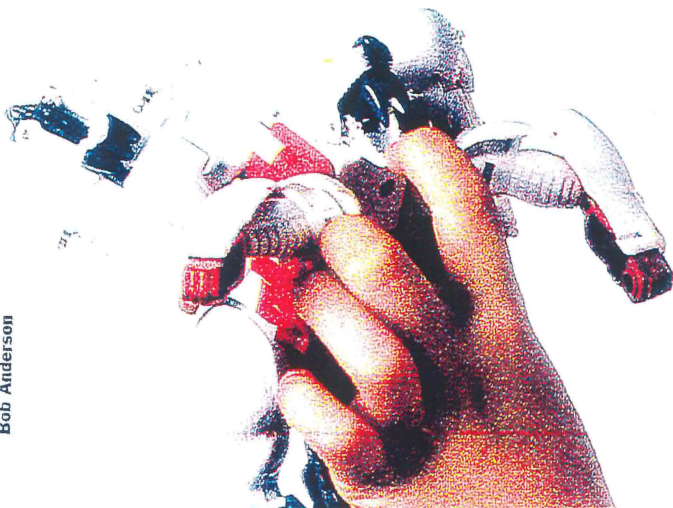
REAL LIFE

BY MATTHEW CHURCH

If you are a parent of a boy anywhere between the ages of five and 11, you probably know about Beast Wars Transformers already, a line of boys' action figures that also feature in a television program. Unlike what you might expect, however, the toys aren't spin-offs from the show. The show was created to promote the toys.

Beast Wars figures are based on the hugely successful Transformers of the mid-to late '80s. The hard plastic animals (rat, cheetah, dinosaur, boar, armadillo and more) resemble malevolent mutants of their real-life counterparts, and can be twisted, pulled and unfolded into complex and menacingly robotic forms. So far, the best-selling figures are good guys Optimus Primal (a gorilla), Cheetor and Rat Trap, and evil guys Megatron (a dinosaur) and Tarantulas. Boys in particular are fascinated by the complex series of moves required to transform them. (Less than 15% of total sales will be purchased for or by girls, according to Hasbro Inc., the company that manufactures the toys.) To many adults, the transforming action is as befuddling as a Rubik's Cube, though some five- and six-year-olds can completely reconfigure even the "Ultra" models in mere seconds. Inspired by the TV show, they often yell "Maximize" as they do so.

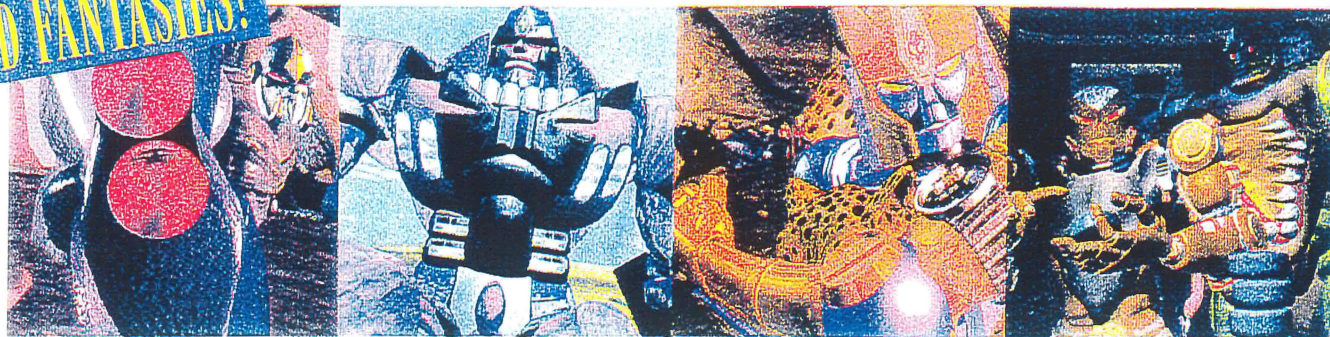
Equally fascinating to boys is the array of bizarre weaponry that presents itself, including attack bees and bats that are built into the animal's structure but that can be detached and fired off the host creature, as well as darts, bullets, boomerangs, tail-ends and a variety of weapons mounted on



Bob Anderson

As one of the largest combatants in the worldwide battle for toy supremacy, Hasbro

FEED FANTASIES!



spring-loaded arms. The simplest versions, with limited features, are sold in blister packs retailing at \$8.99 and up. At close to \$30, the much more complex "Deluxe" and "Ultra" figures come with detachable projectiles, instructions and promotional comic books offering a story line. Every package, featuring the garish Day-Glo logo and lurid artwork, also includes a cut-out collector card that lists "bio & tech specs" and rates intelligence, strength, courage and other traits on a scale of 1 to 10, as well as additional information on weaponry, shield composites and primary functions. Clip and save! Collect 'em all!

Popular as they are, the Canadian Toy Testing Council gave the toys only one star, complaining that "transforming was difficult and body parts continually fell off." True, but the kids who play with them don't care. What they do care about is owning as many figures as possible and watching *Beast Wars*, the TV show, which involves the warring tribes of heroic Maximals and evil Predacons—all of them highly evolved robotic beings—marooned on a planet that looks a lot like Earth. Both groups are locked in perpetual warfare as they attempt to seize control of the planet's Energon, a uniquely powerful energy source that will enable whoever controls it—no surprises here—to rule the universe. However, they also need to adapt to their new environment (for reasons at once too complex and too simplistic to explain here). Thus they take on the outward identity of indigenous insects, mammals and dinosaur-like creatures, enabling them to transform themselves from their animal forms into devastating robots with a fantastic array of weaponry.

Despite claims that the show is non-violent, it consists primarily of stylishly rendered warfare without blood or guts (they are robots, remember). The claim is also made that the violence happens only between robots, which can never kill each other. While that may teach children that there are no consequences to such behavior, *Beast Wars* is certainly not as violent as other programs currently on the air—the news, for instance. At least in *Beast Wars*, the good guys always win.

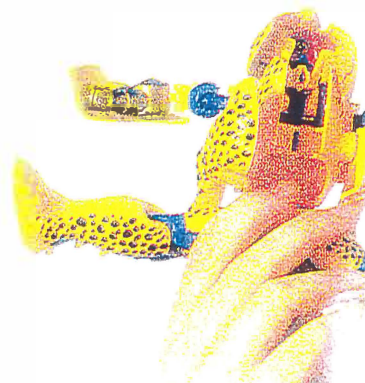
In fact, the real war being fought here is for your children's hearts and minds, since they are the quickest way to your wallet. A great deal of money is being spent before Christmas to convince your children—who will, of course,

then try to convince you—that what they really, really want is at least one Beast Wars Transformer lurking under the tree. Here's why and how.

First, nearly 60% of the roughly \$900 million Canadians spend on toys is being spent right now, in the three months leading up to Christmas. Sales of toys for girls four to 11 ring in at around \$130 million each year in Canada (top-sellers include Barbie, Polly Pocket, Littlest Pet Shop and Sky Dancers). But the most lucrative segment—\$210 million—is toys sold to boys in the same age range. Boys action-figure lines (G.I. Joe, Beast Wars Transformers, Gargoyles, X-Men and so on) take in an extraordinary \$90 million annually. Hasbro Inc.'s Batman tops the list as the best-selling action line. In the secretive world of the toy wars, where sales tallies are nearly impossible to come by, one source speculates that the Batman pantheon of action figures—Laser Disc Batman, Batman dressed as a pirate or sporting a version of Ancient Egyptian garb, 18-inch Talking Batman, as well as vehicles, punching bags, lunch boxes, slot-car sets, electronic pinball machines *ad infinitum*—accounts for about \$30 million in this country alone.

As one of the largest combatants in the worldwide battle for toy supremacy, Hasbro has an army of boys' toys. GI Joe, reconfigured to a steroid-enhanced 4¾-inch cartoonish figure with a hundred permutations, and the *Star Wars* category both ranked in the top six best sellers in Canada for boys four to 11. As a result, Hasbro has 60% of the male action-figure market in Canada, a sizeable chunk, but one that could still be improved.

The company decided that what it needed to boost sales still further was to revamp and relaunch a former success. In the early '80s, Hasbro had stumbled upon a concept that was to redefine action figures and create immense profits. That line of toys was Transformers, vehicles that could be converted, through some fairly complex manipulation by the child, into imposing robotic warriors. Designed by a Japanese toy manufacturer, the



has an army of boys' toys, and 60% of the male action-figure market in Canada

gadget took North America by storm. From a standing start in 1985, Transformers grew to sales of \$55 million in 1987 in Canada. Tony Demacio, a Hasbro Canada senior vice-president, sales and marketing, worked for a competitor at the time. "Occasionally a phenomenon hits," he says. "Cabbage Patch dolls were one. Transformers were another. It was a frenzy. The demand just grew and grew."

By the early '90s, though, Transformers had begun to die out. The market had been exhausted, and boys were turning elsewhere. "The peak lasted for three or four years," says Demacio, now responsible for all of Hasbro's Canadian pre-school activity and boys' toys sales and marketing, "before dropping down to \$2 million annually. There was still a demand, but nowhere close to what it had been. We felt that it shouldn't go to the grave."

So in 1993, orders came down from Hasbro headquarters in Pawtucket, Rhode Island, to save the line. A battalion of designers and market researchers specializing in boys' toys was assigned the task of remaking Transformers. After months of studies, speculation, story lines and sketching, the team had created several possible strategies. In October, 1994, presentations were made to the Hasbro senior-management review team. Two approaches were selected as most likely to succeed and sent back for further development. The first was an update on the old concept—just new vehicles, new robots. The other was based on animals that could morph into robots.

Demacio recalls the meeting where the decision to commit was made. "In January, 1995 we got the hand-

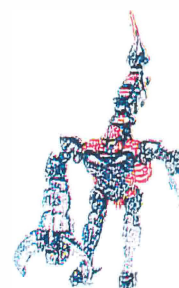
made samples of what they were designing. The reaction in the room was, 'Wow!'" They decided to give the vehicles—which had been on the market for 10 years—a much-needed furlough. The rejuvenation of the Transformer product line was going to be based on a rat, a gorilla, a cheetah and an assortment of dinosaurs.

Immediately, line manufacturer Takara Inc., the inventor and licensor of the original Transformers, was given the designs to determine what was actually possible within the crucial retail price points of \$8.99 and \$29.99. From its headquarters in Tokyo, the company costed out every feature. The most cost-effective place to manufacture them was in one of the company's plants in the Shenzhen Special Economic Zone near Canton (more than 50% of all toys sold in North America are manufactured in China).

It was time to get the retailers on-side and begin making the pitch for volume and in-store locations. "We meet regularly with the buyers, merchandise managers, senior executives from Toys 'R' Us, Wal-Mart, Zellers, the department stores," says Demacio. "We let them hold the toys, play with them. We tell them how we're going to present the product, how it will be supported. If the response is negative, it's back to the evaluations. Then we come back to them with a stronger marketing plan."

The retailers can be helpful in other ways, too. "They also buy a lot from our competitors," says Demacio. "They won't give us specific product information, but they do give us insight. They'll say, 'There's something similar coming out there. You might want to look at adding another feature to that item.' Or maybe we'll change one of the features so we don't add to our cost, but are different from what our competitor is bringing to market."

In those meetings with their most important retailers, Hasbro presented the Beast Wars product as well as its retail presentation, pricing and positioning strategy, including plans for a TV show as support. This last component of the marketing offensive is crucial for today's toy manufacturers in creating demand. "It was a resounding success," says Demacio. "We thought it was in touch with what people are thinking about in the '90s." In other



POWER MARKET!

The real war being fought here is for your children's hearts and minds, since they are the quickest route to your wallet



PERENNIAL BEST-SELLERS

As listed by the Toy Manufacturers' Association of America

CRAYOLA, 1903: 100 billion crayons made

TINKER TOYS, 1913

RAGGEDY ANN, 1915: the oldest licensed product in the toy industry

LINCOLN LOGS, 1916: created by John Lloyd Wright, son of Frank

SCRABBLE, 1931: over 100 million games sold worldwide

LEGO, 1932: plastic began to

replace wood in 1949. Since then, 125 billion Lego pieces made

MONOPOLY, 1935: licensed in 33 countries in 23 different languages; sold over 100 million sets worldwide.

SLINKY, 1945

PLAY-DOH, 1946

BARBIE, 1959: over 600 million sold in 140 countries. Mattel sells over 20 million BARBIE fashions annually

ETCH A SKETCH, 1960

EASY-BAKE OVEN, 1963

G.I. JOE, 1964: began as a 12" poseable toy soldier; in 1976, shrank in size and became known as Super Joe; in 1982, another small version of G.I. Joe became the most popular and extensive action-figure line ever. In 1991, the original 12" figure came back as Hall of Fame G.I. Joe. In 1996, G.I. Jane, pilot of a med-evac helicopter, introduced

HOT WHEELS, 1967: more than 1 billion cars have rolled off the assembly line

CANADIAN TOY TESTING COUNCIL BEST BETS FOR 1997

Baby Go Bye Bye: doll with cloth carrier

Chunkie Washable Markers

K'NEX Power Pack Series: build your own dinosaur

Magic Family Play Structure: portable playground

Pico: computer activity centre for TV

Push 'N Pedal Trike

Talking Globe: educational toy

Woodtown: roadset

words, Hasbro is banking on the fact that, by using animals instead of vehicles, the company can cash in on the generation of consumers interested in the environment and the toll of species extinction.

The first assault on the public was in February and March '96, in partnership with one of the most successful advertisers to kids (and through them to their parents): McDonald's. Cheaper, less intricate versions of Beast Wars Transformers were specially manufactured and given away as part of a Happy Meal promotion. At the same time, Hasbro tested the new Littlest Pet Shop line for girls, a pocket-sized set of animal dolls and houses.

Getting toys to kids through McDonald's "is an incredible marketing tool," says Sandy Sinclair, a director of marketing for boys' toys at Hasbro Canada, with responsibility for the Beast Wars line. Product placement "gets the product out there. And can be a source of a lot of information about reactions to it." Follow-up research showed they could be a winner. "We had an instant response from the children and their parents," says Sinclair. "This was a very basic transforming toy. Nothing compared to the current product...but it created the need." Still, to have legs, it would need a strong story line, a ready-made play scenario the kids could adopt for their own.

In 1969, Hasbro had acquired Romper Room Inc., the producer and distributor of the television show of the same name. Now named Claster Television Inc., it is an integral component in the marketing of Hasbro toys, a means to create and distribute the programs that will support the product lines, from the Littlest Pet Shop (which has a show of the same name) to G.I. Joe. This kind of situation is not unusual. There is a profoundly symbiotic

relationship between the toy and entertainment industries. Many of the hottest toys every year owe a tremendous amount to the movies that inspire them, creating demand for anything and everything from action figures to bubble bath. In fact, licensing arrangements are often signed long before principal photography even begins. Batman had benefitted from the *Batman* movies and ongoing Saturday morning cartoons. And last year's *Toy Story* had demonstrated what a film could do for even aging staples like Mr. Potato Head. For Beast Wars Transformers to really go over the top in terms of sales, Hasbro needed a vehicle that kids would watch, a TV show to get the product into little boys' fantasies. Sort of an infomercial with great action.

Hasbro approached Mainframe Entertainment Inc. in Vancouver with an offer to license a *Beast Wars* television show. One of a new wave of small companies using computer-generating imaging (CGI) to create an entirely new style of animation, Mainframe shot to prominence in 1993 with the hit TV series, *ReBoot*, a cyber fantasy set inside a computer. The show was Mainframe's first creation, and its success has since spawned a line of action figures, made under licence by Irwin Toys.

The *Beast Wars* deal was soon struck. Mainframe would produce 26 30-minute episodes based on concepts created by the Hasbro marketing team. Hasbro would put up a portion of the money and would review the scripts; Claster would handle distribution. Mainframe and Alliance Communications Corp., then a 50% partner in Mainframe (since reduced to 15%), would garner additional financing and produce the show. In addition to considerable sales revenue through Claster's extensive syndication net-

work, Mainframe would also earn a back-end royalty on wholesale sales of the toys, a potential gold mine for the small company.

The result, says Louise Brown, parenting reporter for *The Toronto Star*, is "cotton candy for the eyes." *Beast Wars*, the TV show, has a slick look, featuring gleaming surfaces, sophisticated lighting effects and intriguing 3-D visuals. But, says Christopher Brough, Mainframe's president and CEO, it is the ability to capture "down to the molecule" the look and feel of the toys that likely appealed to Hasbro. CGI's ability to hyper-realize violence and explosions makes it very appealing to *Beast Wars*' intended audience.

Since first airing in April, the show, to Hasbro's delight, is doing very well. Syndicated in 90% of the U.S. market, *Beast Wars Transformers* airs on weekday mornings, and is No. 1 in ratings for its target audience in 75% of its markets. Each show can air as many as 15 times (and in some cases, more) over the first year in a given market. In Canada, the youth-oriented specialty channel YTV airs the show in evening slots under the name *Beasties*. When they were initially shown the program, says YTV programming director Paula Parker, "we loved it. We knew Mainframe because we had such success with *ReBoot*. But we weren't comfortable with the name. *Beast Wars* just wasn't in keeping with our image." The otherwise identical show airs at night, since YTV's programmers also felt that the level of violence should be kept away from the youngest children, even if that violence is, as its defenders say, between machines representing good and evil. "The name-change is not an ideal situation," says Hasbro marketing director Sandy Sinclair. "But the names are close and the logos are identical. We've seen very little confusion."

Small wonder. With heavy advertising concentrated on this very specific target group, most children will see a *Beast Wars* action-figure commercial countless times before Christmas. (The broadcast code prohibits any advertising of action figures or toys during the airing of the relevant show.) While no one will reveal such closely guarded secrets, the advertising budget for *Beast Wars* figures is in the millions. "It is TV-advertised very heavily," is all Tony Demacio will say. "As much as Batman and *Star Wars* figures."

The campaign is working. A phenomenal success, certain figures were selling out as early as March. Kids are playing with them at recess, engaging in mini battles of

good versus evil, arguing over who is most powerful and eyeing the "coolest ones" for inclusion on their Christmas lists. Demacio sees the early success in Canada as a harbinger of great things. "This could be the next big one. In this brand development, this brand introduction, all the elements are working. The show is a hit, the toys are great collectibles, lasting. Kids want more than one."

It's interesting to speculate on why that should be. Dr. Otto Weininger, professor of child clinical psychology at the Ontario Institute for Studies in Education, University of Toronto, has spent his professional life studying children's play. Boys, he says, have always felt a need for aggressive play. Transformers "give them the sense of controlling a situation." Unlike their own lives, governed by adults and filled with frustrations, these toys allow them to be in charge. "They can 'transform' themselves when a situation demands aggression," says Dr. Weininger. "It isn't necessarily an expression of hostility. It may be that they are mimicking what they see around them, helping them to cope with the aggression and hostility they witness every day." As for the fascination with collecting several figures, Weininger sees this as an attempt to manage aggression. "In a way, the boy is saying, 'I can control them.'"

Whatever the reason for *Beast Wars Transformers*' phenomenal popularity, demand is being driven higher and higher. Availability has become a problem. In the frenzied run-up to Christmas, there is little opportunity to get new product in the stores. "We anticipated high demand," says Demacio with a smile, "but not like this. If we could get the product, I think we could sell \$10 million." With a three-month lag between order and delivery, there's not a lot of flexibility in ramping up. Still, with weekly and even daily inventory sell-through data available through Electronic Data Information

downloads from points-of-sale, Hasbro read the numbers in September and October and placed rush orders with the manufacturer for the hot sellers. "We are hustling for inventory," says Sandy Sinclair. "Calling in favors, twisting arms." However, as demand has heated up in the U.S., inventory has become slimmer and harder to get. "We'll probably manage 60%, maybe 70% of what we could sell," allows Demacio. Which adds up to \$7 million in Canada in less than a year. For a toy that was fading, it's quite a transformation. ■

Father of a five-year-old daughter with a newfound passion for Beast Wars Transformers, Matthew Church has had to figure them out. Sort of



Boys, says one psychologist, have always felt a need for aggressive play. Unlike their own lives governed by adults, these toys allow them to be in charge



AycoSS

Oct/Nov 1996

Maximum Babe!

Is Natasha Henstridge
Hollywood's New
Golden Girl?

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Brian Setzer

Smokin' Stogies with the
Rockabilly King Of Swing

The Main Event

A No Holds Barred Interview
With Royce and Rorion Gracie

Digital Cartoons

ReBoot Conquers Saturday Morning

Exclusive!

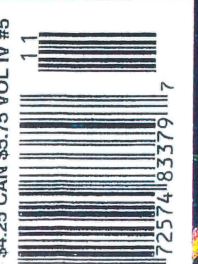
Tim Burton

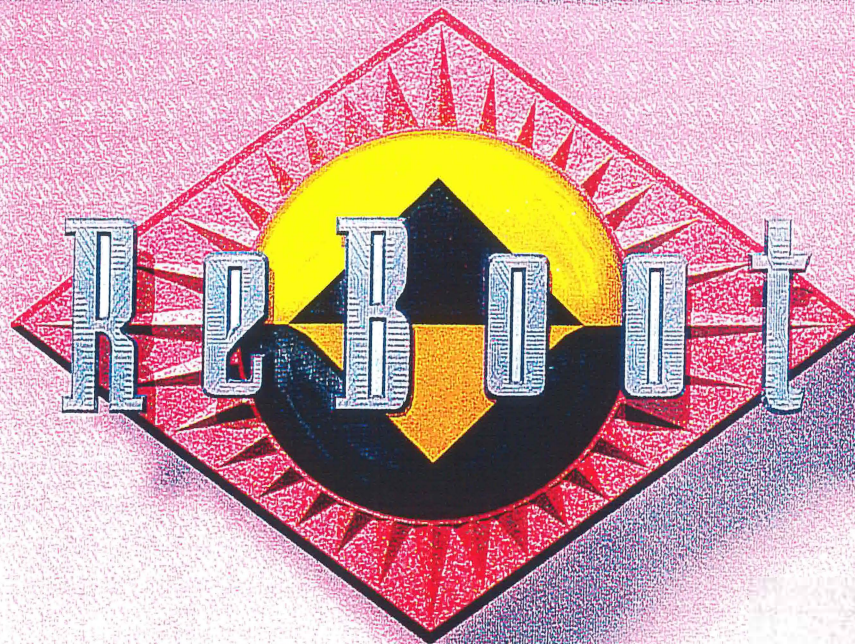
The Mysterious Mind Behind *Mars Attacks!*

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+PLUS

The Reverend Horton Heat
Psychotica + El Chupacabra
Creepy Web Sites + Vampirella





Canada Gives Us Our First Dose of Saturday Morning Cyber-Toons

By Brian F. McCaughey

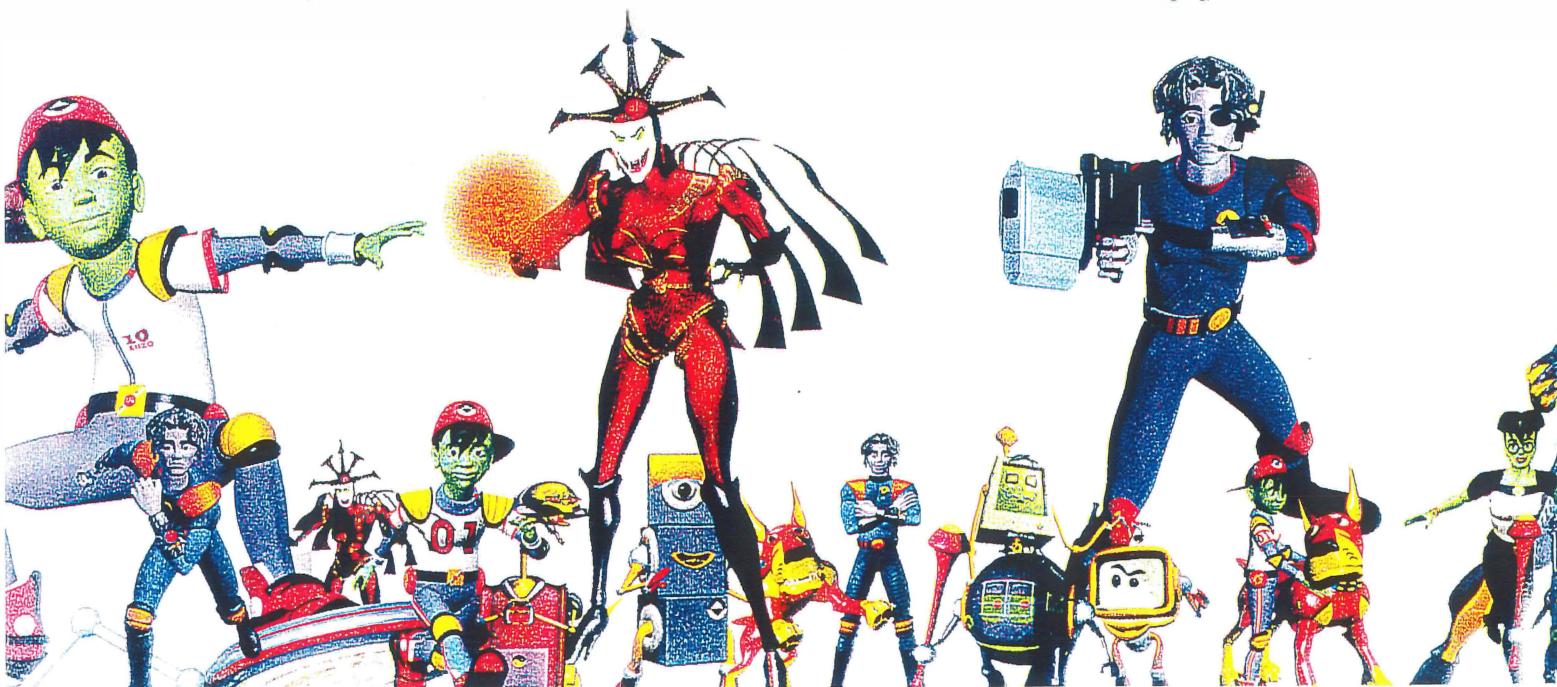
I am a cartoon fanatic. I watch them. I draw them. I buy the toys, and occasionally I get the kids' meal. Every Saturday morning I can be found in front of the TV with the remote in one hand and a bowl of the latest ultra-processed artificially flavored/colored crap in the other. But for the past several years, the programming content has had the same effect on me as the yellow moons, green clovers, and purple horseshoes. They've both become really hard to swallow. A few shows that are actually funny—like *Freakazoid* and

The Tick—have surfaced recently, but it's been a long time since there was an animated Saturday morning show that was... well... cool.

Enter *ReBoot*, the world's first 100%-computer-generated television show. There's nothing else like it. It's like watching a new episode of *Toy Story* every week, only the characters and stories are much better. No wonder the show's a hit. *ReBoot* has dominated the 10:30 AM time slot and become one of ABC's highest rated Saturday morning shows. During its two year span, the show has

gained worldwide success and can be seen in over 47 countries including Croatia, Kuwait, and Indonesia.

But just as fascinating as *ReBoot* itself is the story of its creation. The show's creators faced problems similar to those of George Lucas and his crew at Industrial Light & Magic when they were making *Star Wars*. They had to do what had never been done before, only this time in a completely new medium—the medium of CGI (Computer Generated Imaging).



It all started when early CGI pioneers Gavin Blair, Ian Pearson, and Phil Mitchell were working in London doing computer graphics sequences for commercials. During that time, Gavin and Ian worked together to produce the first CGI music video, the highly successful "Money For Nothing", for Dire Straits.

"That video was where the germ of the idea sprang from," says Blair. "We thought, 'Wouldn't it be really cool to do a whole show like this?' While we were still in London doing our day jobs, we used to kick this idea around for... I guess it must have been four years. And it just sort of grew and developed and just took solid shape, and we actually started writing it down until it became a treatment for a TV series."

But nobody had ever seen anything like that before. At the time, "CGI" was practically just another term for "FX." Movies like *Tron* and *The Last Starfighter* had incorporated some CGI effects, but nothing on the scale of *ReBoot* had ever been produced. Most industry insiders didn't believe that television audiences would watch 26 minutes of CGI every week. But eventually, word of the project reached Christopher Brough, a producer who knew that if a show had good stories and characters, it could be presented using any medium, including CGI.

"I was brought into *ReBoot* initially when I was introduced to the idea by Jim Henson," says Brough. "We'd done a couple of shows together and he mentioned the fact that he'd been presented with an idea of doing a show for kids using computer animation. I loved the idea, but it's very hard to get financial backing for a youth-oriented show that is

based on a totally new idea. Networks or broadcasters feel far more secure in putting money into something that's already proven to be profitable. So you could imagine the kind of challenge that it presented us."

"The next question was, 'Can it be done?'" adds Blair, "because it's never been done before. It took a long time to convince people that (1) we could do it, and (2) it was worth investing the money in doing. 'Cause it was a lot of work before you saw any pretty pictures."

Eventually, Blair, Pearson, and Mitchell (collectively known as "The Hub"), along with Brough, were able to find a partner in Alliance Communications, a producer of several TV and motion picture projects. Together they were able to build the Vancouver digital animation studio known as Mainframe Entertainment, Inc., where *ReBoot* is produced.

in order to produce a show, and it certainly wasn't easy at the beginning."

Not easy, indeed. There were six to nine months of preproduction involved in the first episode of *ReBoot*, after which another twelve weeks was necessary to actually put it all together. They now have the process down to a science. Two episodes can be completed in about six weeks, generating about two minutes of completed animation per day.

A *ReBoot* episode starts with a story conference. Blair, Pearson, and Mitchell sit with a script writer, a script supervisor, and a story editor and plot out a story. It takes about three rewrites for them to get a completed script that they're happy with. Voice actors act out the script, and their performances are recorded onto digital tape and fed into an AVID (a non-linear audio/video editing system). The editor sits in

90% of all the work done on ReBoot is completed using Microsoft's SoftImage system, the software used to create the dinosaurs in Jurassic Park, an elephant stampede in Jumanji, and Jim Carrey's alter ego in The Mask.

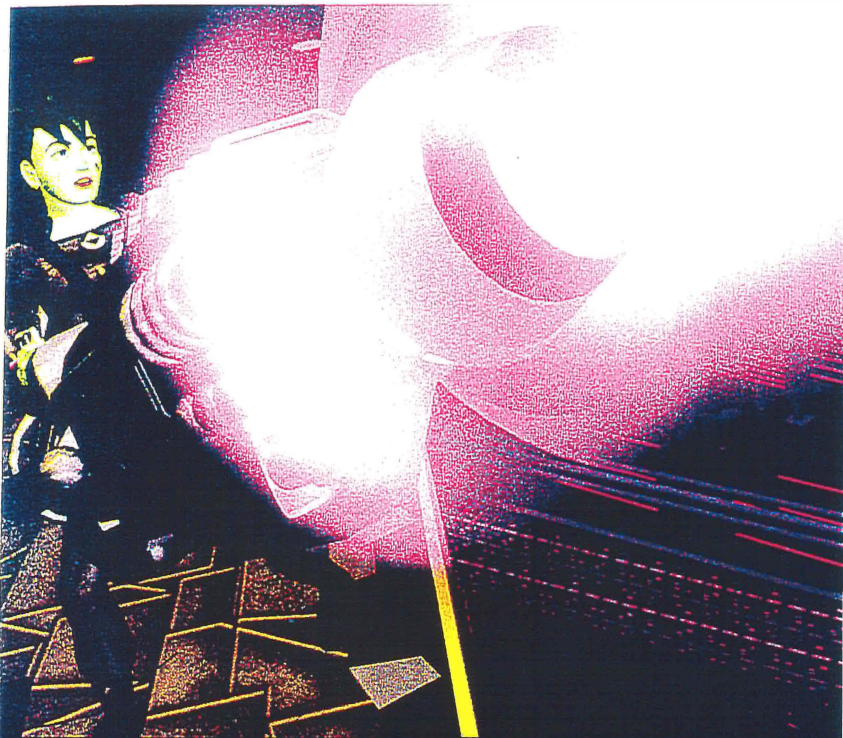
"We wanted to get into the animation business," says Alliance Multimedia President Steven DeNure. "Animation, especially conventional animation, is quite a crowded market, and what we saw in *ReBoot* was the opportunity to get involved in a truly unique kind of animation. That's what attracted us."

"We created the studio to make the series, given that we had sales to ABC in the US, ITV in the UK, and YTV in Canada. So we went into production based on those presales. It's not very often that you have to invent a whole new way of making television

with the director and chooses the best takes for the show.

Once the dialogue has been paced, stock stills (mugshots of the various characters) are presented to produce a kind of digital storyboard. "We don't do conventional storyboards here," Blair explains. Together, the director, the supervising animator, and the editor call up the relevant character from Mainframe's library and put him or her in the appropriate set and pose. Camera shots, lighting, and special effects are decided upon at this stage.

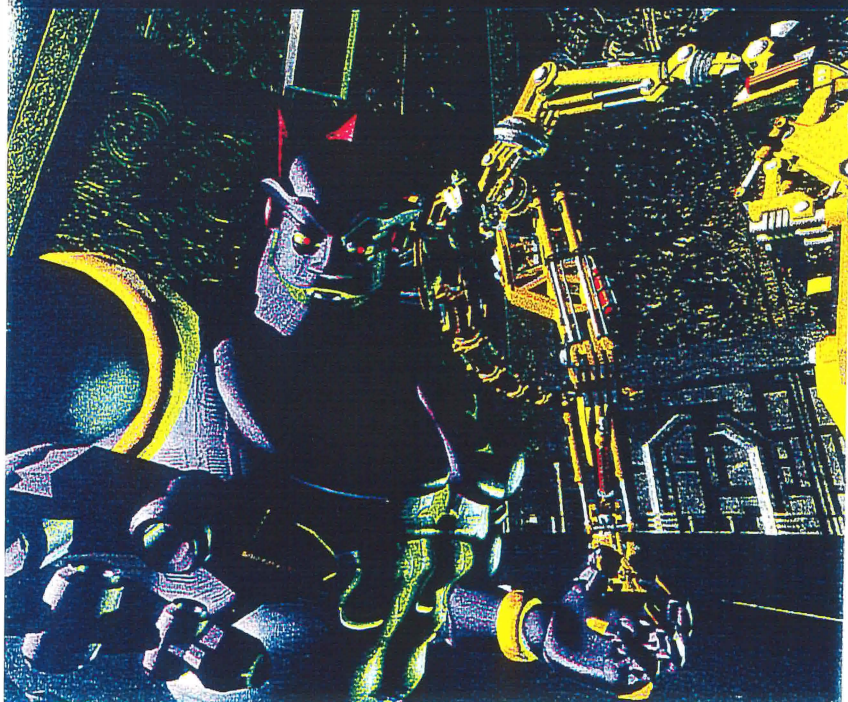




Above: Cyberspace hath no fury like a girl with a big gun. Dot blasts away at the ever-looming web.

Opposite Page: Cro-Magnification. The realistic textures visible on Optimus Prime's skin and hair put this "synthespian" near the Jurassic Park league.

Below: "Get away from that you bitch!" Dot does her best Sigourney Weaver as she dons her exo-skeleton suit and approaches an unsuspecting Megabyte.



Once those decisions have been made, the director will present his work to the animator and explain the scene, its characters, the timing, etc. The animator then begins putting the scene together.

90% of all the work done on *ReBoot* is completed using Microsoft's Softimage system, the software used to create the dinosaurs in *Jurassic Park*, an elephant stampede in *Jumanji*, and Jim Carrey's alter ego in *The Mask*. All of the 3D animation, including modeling and rendering, is done using Softimage on UNIX-based Silicon Graphics workstations. However, the other 10% is done on an in-house program called GRIN, which was written by the crew at Mainframe. GRIN is a proprietary software package that is used to produce facial expressions and enables the characters to lip-sync the dialogue.

The completed animation is then dropped into the AVID system. The director gives his feedback and adjustments are made. After the director approves, the scene is then rendered. If special effects are needed, the scene is then transferred to the digital editing suite. Here, laser blasts and other effects are added, and the completed material is dropped back into the AVID again.

The finished scenes are handed off to Bob Buckley, *ReBoot*'s composer. Buckley scores the soundtrack and, upon the director's approval, the music is added to the scene. Finally, the scenes are sent to a sound effects house where all the various zap and crash noises are added. Another first, *ReBoot* is recorded entirely in surround sound. It therefore takes about 200 hours to customize all the sounds used in a single episode. Once that has been completed, you have a finished show.

Although *ReBoot* is the only show that is done entirely on computers, that doesn't mean that the rest of Saturday morning isn't user friendly. Quite a bit of today's 2D animation is done using computers. For example, the USAnimation System is a software package that, like Softimage, also runs on the Silicon Graphics platform. Animated commercials, television series' and even a feature film have all been produced on it. Using the system, hand drawn images can be scanned into the computer and then painted and animated, saving precious production hours that would normally be spent doing it all by hand. So, while it is correct to say that *ReBoot* is the only 100% computer animated show, it's not the only show that utilizes computer technology.

But *ReBoot* is more than an animated show made from computers. Its basic storyline is *about* computers. This is something that was planned from the start.

"In the beginning," says Blair, "computer systems and animation systems were nowhere near as advanced as they are now. And basically we needed an excuse for the look of the show because, originally, *ReBoot* was gonna look like (the) Dire Straits (video)— blocky, boxy characters. How do we explain that away? If it's set inside a computer, we could say, 'Well, that's what things look like inside a computer.' It took four or five years to get the show off the ground, during which time the technology evolved to where it is today. The show evolved with it. So these days it doesn't matter so much."



ReBoot takes place inside the world of a supercomputer, a place known, ironically, as Mainframe. This multi-level city is populated by two kinds of citizens: the data sprites, which are human looking programs (ala *Tron*); and the binomes, which are the blocky, robotic-looking characters. The binomes are "binary," so their shapes usually represent large zeros and ones.

The data sprite named Bob is the primary character. Sporting thick chrome-plated bangs, Bob is a top level guardian program who modemed in from the Super Computer's Port Authority. He protects Mainframe from any and all threats with the

help of Glitch, a digital version of Felix's bag of tricks that can change into any object Bob may need (like "Cursor" from the short lived ABC series *Automan*, about a computer program come to life).

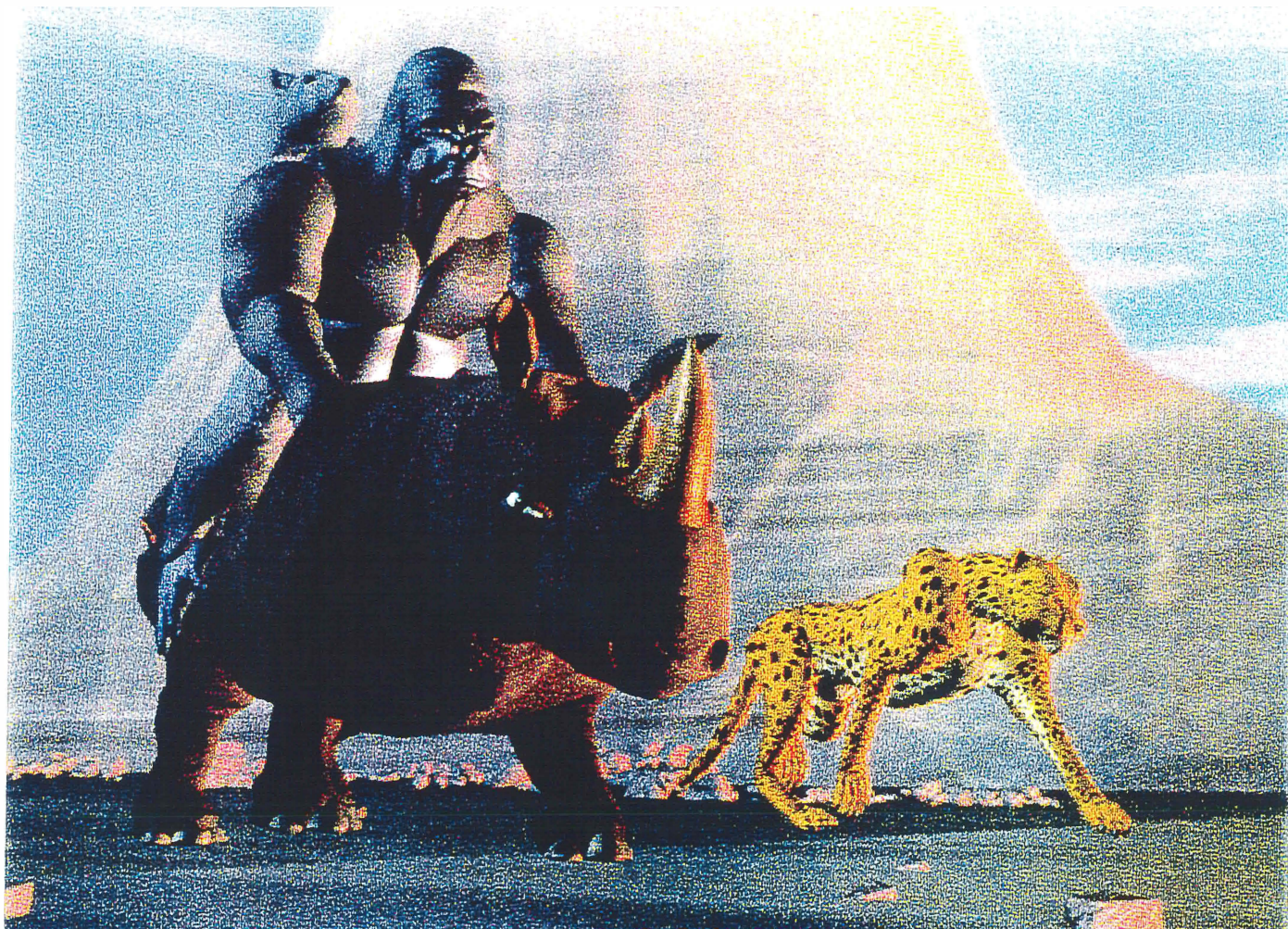
Bob is also assisted by a curvaceous female sprite named Dot. Don't underestimate her just because she spends her time running her own cyber-diner. This entrepreneur pulls Bob out of many ugly situations. Dot's little brother, Enzo, is a young boy who absolutely idolizes Bob.

Another ally is Phong, Mainframe's oldest living Sprite. Phong is the last remnant from the old IBM 360 days and is the Executive

Secretary to the command.com (the unseen, unheard Mayor of Mainframe). In order to receive any guidance or wisdom from this digital Yoda, you must first beat him in PONG (Puck Oriented Non-linear Game, the first video game).

Also amusing is the computer terminology that is prevalent throughout *ReBoot*. The camera will often zoom past Calvin Spline, which is located on Baudway. When Enzo regrets lying, he says he "should have cut and pasted the truth." When he is feeling disheartened, he is told not to "quit file" so easily.

Mainframe's only outside influence is the User, the human who is operating the



The Land Before QuickTime. Rattrap, Optimus Prime, Rhinox, and Cheetor explore their primitive new home in the new Transformers cartoon, Beast Wars.

computer that contains the world of Mainframe. When the User feels like playing a video game, a large, ominous game-cube descends upon a certain sector of the city. All citizens trapped inside that sector become instant game players. So far, the games have put our heroes in jet planes, formula one race cars, and *Mad Max*-style road battles aboard big rigs. These games may seem fun, but they can also have deadly consequences. If the User wins, then that particular section of Mainframe goes off-line and the citizens left inside become zombie-ish creatures called Nulls.

The User isn't the only threat to Mainframe. Megabyte, a virus created by a computer hacker, is a dastardly villain who covertly made his way into Mainframe by attaching himself to a word processing program. He already controls about one-third of the city, but his lust for power urges him to control all of it... and beyond.

The other enemy is Hexadecimal, another virus who resides in the floating City of Lost Angles. Hexadecimal is a deadly

chaos-driven virtual vixen whose facial features don't move. Rather, she replaces her face with various masks that reveal her emotions. Initially, some of these facial expressions were so horrifying that the networks asked the producers to "tone them down." She was outscaring Megabyte.

But the biggest foe of all would have to be Mickey Mouse. Yes, you read that right. Last year the Walt Disney Company acquired Cap Cities, which in turn owns ABC. *ReBoot* may have stood out among their Saturday morning lineup that year, but the lineup as a whole wasn't particularly successful. Now that the acquisition has taken place, and Disney has a ready-made network to showcase its programming, expect to see a Disney-dominated lineup on ABC. In short, the mouse gave *ReBoot* the boot.

However, the citizens of Mainframe can rest easy. *ReBoot* won't be going off line any time soon. Claster Television, Inc., the people who distributed *G.I. JOE* and *The Transformers*, have picked up *ReBoot* for syndication. The show won't belong to any network in the US,

and any station will have the option to pick it up. (Shows such as *Star Trek: The Next Generation* and *Babylon 5* went on to become enormous successes, due in part to the flexibility of syndication.)

"We're terribly excited about moving off ABC and into first run syndication," explains Brough, "because it allows us, frankly, a little more artistic freedom to take the show where we think the viewers want it. The biggest challenge created by the networks was that they would never allow a character to be truly placed in jeopardy. You could never end an act break with a character in real peril. We had a kind of milque-toast approach that was forced upon us in working for a network that, fortunately, we no longer have."

Even though those issues have been resolved, the crew at Mainframe and Alliance isn't about to rest on their cyber-laurels. They already have another CGI project on the air. *Beast Wars/Transformers* is their newest project in syndication.

"We knew that Hasbro was interested in having a series produced based on a possible

re-launch of the *Transformers* toy line," says DeNure. "So we went to them and showed them what we'd done with *ReBoot*, and essentially pitched them an idea which developed the series.

Beast Wars pits two warring factions of transforming robots, the Maximals and the evil Predicons, against each other. The evil leader is still known as Megatron and the hero retains the name Optimus Prime, but beyond that there are few remaining similarities to the *Transformers* show of the 80s.

Both groups have been shipwrecked on an earth-like planet rich in "energon," the fuel these robots need to survive. In fact, there is so much energon that it has a damaging effect on the robots when they are in machine mode. Therefore, they must transform themselves into something closer to the lifeforms native to the planet. Basically, they don't become cars or jets anymore. They now transform into cheetahs, velociraptors, etc. They only revert back to robotic form when they are battling each other, but even then they can only do so for a limited time.

Along with *ReBoot* and *Beast Wars*, Mainframe has also been hired by IMAX Rides to produce two CGI 3D "Ridefilms" based on the *ReBoot* storyline. They are also working with Electronic Arts to produce a *ReBoot* video game for the Sony PlayStation,

Sega Saturn, and PC CD-ROM.

But the Mainframe crew is also quite busy developing season three of *ReBoot*. At the end of season two, CGI agents Fax Modem and Data Nully, based on *X-Files* FBI agents Fox Mulder and Dana Scully (*X-Files*' Gillian Anderson actually stepped in to lend her voice), discovered that the Web had found Mainframe. Bob, Dot, Enzo and all the citizens of Mainframe teamed up with Megabyte and Hexadecimal to fight the evil Web which threatened to engulf the city.

"Bob always says, 'I come from the Net,'" says Blair. "We always said that the Net was the nice side of the universe. We were dropping hints about the Web being the dark side of the universe. So at the end of season two, when they were getting rid of the Web, they had to work together to get rid of it. Megabyte double-crossed Bob and sent him into the Web and shut the door. But Bob is out there somewhere and he'll be back. It's gonna be a bit rough for the good guys for a while. But we're gonna keep it funny, too. It's gonna look a lot darker and some of the subjects are gonna be a bit darker but it's not gonna be really heavy. We are gonna keep the humor in there as well."

But perhaps even scarier than the thought of a Megabyte-controlled Mainframe

is the thought of a Mainframe-controlled Hollywood. Brough will be the first person to tell you that CGI will never replace traditional 2D animation. But when it comes to CGI replacing live action humans, nobody seems to know for sure. At press time, James Cameron (director of *T2* and *Aliens*) announced that he and his special effects company Digital Domain (*True Lies*, *Apollo 13*) would embark on a film entitled *Avatar*, the first live action motion picture to feature five photo-realistic CGI actors as its stars.

"I would be curious whether or not what [Cameron] ends up with is truly a CGI-generated character," says Brough, "or if it's not in fact reliant, remarkably, on motion capture, live action photography, rotoscoping, or characters in suits—which *T2* relied on a great deal.

"I think they're replacing human beings on *ReBoot* and *Beast Wars*. As far as [replacing humans in] more traditional forms of film making, the answer is a qualified 'no.' There are dozens of people behind [a CGI] actor, creating that actor. So, I'm not sure that this is saving major labor costs, or deleting the need for talent in storytelling. You're not gonna get a performance out of computer, you're gonna get a performance out of human being who's using the computer as a tool." 

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VAN SUN MARCH 3/97

ENTERTAINMENT

Net Worth best Gemini movie

ALEX STRACHAN
Sun Television Critic

A TV movie about the bad old days of professional hockey, a shaggy-dog tale featuring a Mountie and his American sidekick and a satirical newscast emerged as the big winners Sunday at the 11th Annual Gemini Awards, celebrating the best in Canadian television.

In a ceremony broadcast before a live audience at Toronto's John Bassett Theatre, the TV-movie *Net Worth*, about a players' revolt in the National Hockey League in 1956, was the surprise winner in a field that included the made-in-B.C. *Little Criminals* and *The War Between Us*.

Net Worth also won Geminis for its star, Aidan Devine, who played former Detroit Red Wings captain Ted Lindsay, and Al Waxman, who played team general-manager Jack Adams.

Due South was recognized as best dramatic series for the second year in a row, besting *North of 60*, *Road to Avonlea* and the slick CanWest-Global series, *Traders*.

Please see **Geminis, D7**

13 Geminis go to B.C. nominees

Continued from D5

And *This Hour Has 22 Minutes* was chosen best comedy series for the second year in a row, over *Royal Canadian Air Farce* and *Comics!*

It was a banner year for Western Canada, with 13 winners out of 64 categories coming from B.C. — including a clean sweep for Vancouver writers in drama writing categories.

Vancouver screenwriter Dennis Foon won the Gemini for best writing in a dramatic program for *Little Criminals*, while *Little Criminals*-editor Alison Grace won the film-editing award.

Other Vancouver writers winning Geminis were Brent Karl Clackson and Brad Wright, for *The Outer Limits* episode *A Stitch in Time*, and Hart Hanson, who won the drama-series writing award for the *Traders* episode *Dancing with Mr. D*.

Barbara Williams was recognized with a Gemini for best actress in a dramatic program for her portrayal of *Diana Kilmury: Teamster*, one of the three nominated TV-movies that was filmed in B.C.

Vancouver's Callum Keith Rennie won his first Gemini for best performance in a children's series for *My Life as a Dog*.

And *ReBoot* producers Chris Brough, Ian Pearson and Stephane Reichel won their third consecutive Gemini for best animated program.

Madison, however, lost its bid for a second Gemini in the youth program-or-series category to *The Composer's Series: Handel's Last Chance*. *Madison* acting nominees Stacy Grant, Chris Martin, Peter Stebbings and Sarah Strange were also left out in the cold.



BIG WINNERS: best drama series *Due South* (left) and best TV movie *Net Worth*.



Tina Keeper won a richly deserved Gemini, her first, as best actress in a continuing drama series for *North of 60*, while David Cubitt won best actor for his work in *Traders*.

Vancouver film-maker Gary Marcuse won the Canada Award for his documentary *The Mind of a Child*, about radical teaching techniques for disadvantaged aboriginal children.

David Suzuki won an award as best host in a lifestyle information program for the *Food or Famine* segment of *The Nature of Things*.

Vancouver composer George Blondheim won a Gemini for best original score for *The War Between Us*, but Anne Wheeler's graceful film about Japanese-Canadian internment camps during the Second World War was otherwise shut out.

Veteran CBC journalist Joe Schlesinger, who graduated from UBC and was once editor of *The Ubyssy* student newspaper, won the pres-

tigious John Drainie Award, presented annually to the person who has made a significant contribution to broadcasting in Canada.

This award is unlike the others in that the nominations and judging are done by a committee of previous winners.

The 11th Annual Gemini Awards were decided by the 400 voting members of the Academy of Canadian Cinema and Television, and considered programs which aired during the 1995-'96 broadcast year.

Due South was cancelled last spring when CBS refused to pick it up for a third season, and CTV felt it too expensive to continue on its own.

However, the series will return next year on CTV with a new executive producer (series regular Paul Gross) and a new lease on life after an agreement was reached between Alliance Communications, the show's production company, and television interests in Europe.



GEMINI WINNERS

Best Performance by an actress in a leading dramatic program: Barbara Williams, Diana Kilmury: Teamster

Best performance by an actor in a guest role dramatic series: David Gardner, Traders. "The King is Dead . . ."

Best performance by an actress in a featured supporting role in a dramatic series: Kay Tremblay, Road to Avonlea: The Final Season "After the Ball Is Over"

Best performance by an actress in a guest role in a dramatic series: Frances Bay, Road to Avonlea: The Final Season "After the Ball Is Over"

Best performance by an actor in a featured supporting role in a dramatic series: Lubomir Mykytiuk, North of 60 "Refugees"

Best performance in a variety program or series: Buffy Sainte-Marie: Up Where We Belong

Best performance in a performing arts program or series: Ashley MacIsaac, Laura Smith, Governor General's Performing Arts Awards

Best performance in a children's or youth program or series: Callum Keith Rennie, My Life as a Dog "The Puck Stops Here"

Best short dramatic program: The Outer Limits "A Stitch in Time" (Trilogy Entertainment Group, Atlantis Films Ltd.)

Best comedy series: This Hour Has

22 Minutes (Salter Street Films)

Best information series: the fifth estate (CBC)

Best lifestyle information series: Gilmour on the Arts (CBC Newsworld)

Best science, technology, nature and environment documentary: Ebola: Inside an Outbreak (Associated Producers, CBC, NOVA/WGBH, Channel 4)

Best performing arts program or series or arts documentary program: Dido and Aeneas (Rhombus Media Inc., RTP - Portugal, ZDF - German Television., Channel 4 Television U.K., Bravo! The New Style Arts Channel, CBC)

Best documentary series: Forbidden Places Witness (CBC)

Best animated program or series: Reboot (Mainframe Entertainment Inc., Alliance Productions, BLT Productions)

Best children's program or series: The Adventures of Dudley the Dragon (Dragon Tales Productions Inc.)

Best youth program or series: The Composer's Specials: Handel's Last Chance (Devine Entertainment, Alef Studio)

Best sports program or series: Athens to Atlanta: The Olympic Spirit (CBC)

Best live sporting event: Centennial Olympic Games: Day 1 to 16 (CBC)

Best special event coverage: The Quebec Referendum (CBC)

Seven B.C. winners

And Geminis still have more awards to dish out

Reboot — the award-winning hi-tech children's program from Mainframe Entertainment — is one of seven Vancouver-based winners in the first two days of the 11th annual Gemini Awards.

Joining the computer-generated series as winners are Hart Hanson for best writing in a dramatic series (Traders); David Suzuki as best host in a lifestyle information, variety or performing arts program or series; and composer George Blondheim for best original music score for a program (The War Between Us).

In addition, Vancouver actor Callum Keith Rennie won for best performance in a children's or youth program or series (My Life as a Dog); the Vancouver-produced Outer Limits won for best short dramatic program; and

Alison Grace won for best editing of a dramatic program or series.

A surprise non-winner was the highly touted youth series, Madison, which had received six Gemini nominations.

The Vancouver-produced show that is seen in 75 countries has been renewed for a fifth season.

The Gemini Awards annually recognize more than 60 categories of achievement in English-language television production. They are to this country what the Emmys are south of the border.

This year, there were 68 nominees from Western Canada, of which 52 are from B.C.

Leading overall in category nominations is CBC's The National news with 15. Road to Avonlea: The Final Season has 11 and Little Criminals, North of 60 and The Fifth Estate each have 10.

The 10th annual Gemini Awards honoring excellence in English-language Canadian television are being held in Toronto this weekend.



Barbara Williams won a Gemini for her role as Diana Kilmury.

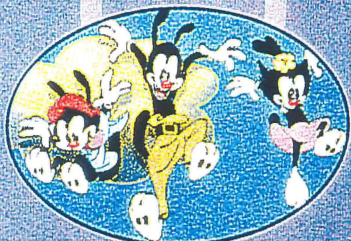
Because of the large number of awards, three evenings are needed to hand out the awards. Tonight, the broadcast gala — awarding the remaining high-profile craft and program awards — will be telecast on CBC (8 p.m.) with an expected audience of 1.3 million.

Among the categories tonight are best sports broadcaster, and best actor and actress in continuing dramatic roles.

If I had my wish...

KidScreen conducted a poll of leading programmers and distributors of children's television programming around the world. We asked them to identify their "The Dream Two-Hour Children's Block." They had the pick of programming from around the world.

THE DREAM BLOCK



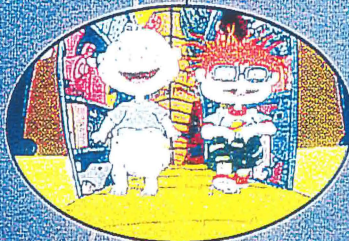
Animaniacs

Warner Bros. Television Animation/
Amblin Entertainment



Goosebumps

Scholastic Productions/
Protocol Entertainment



Rugrats

Klasky Csupo/Nickelodeon



X-Men

Saban Entertainment

Other shows that scored high



Batman

Warner Bros.
Television Animation



Dexter's Laboratory

Cartoon Network Studios



Superman

Warner Bros.
Television Animation



ReBoot

Alliance Entertainment/
Mainframe Entertainment



The Magic School Bus

Nelvana/
Scholastic Productions



The Simpsons

Gracie Films/20th Century
Fox Television/Film Roman

Process

The "dream block" was determined by a simple consensus. We specified that the target audience was children aged six to 11 years, and that the block would appear on whatever day of the week attracts the largest children's audience. Once the results were in, the shows that were mentioned most often—*Animaniacs*, *Goosebumps*, *Rugrats* and *X-Men*—made it to the top.

Our poll representatives

Tina McCann, vice president, programming for Turner Entertainment Networks International, U.K.

Rick Mischell, senior vice president, family entertainment for Live Entertainment, U.S.

Adrian Mills, creative head, children's and youth programming for TVOntario, Canada

Danica Katz, director of programming for Fox Children's Network, U.S.

David Patterson, president of Mediatoon, Canada

Roland Poindexter, director of programming and development for Fox Children's Network, U.S.

Mark Lieber, senior vice president of domestic distribution for Saban Entertainment, U.S.

William Alexander, director of television sales for Alliance Releasing, Canada

Linda Simensky, director of programming for Cartoon Network, U.S.

Sander Schwartz, senior vice president, children's programming for Columbia TriStar, U.S.

Emmanuelle Petry, sales director for Nelvana, France



REBOOT: created in Vancouver, seen in more than 50 countries

Reboot reincarnations coming

MURRAY WHYTE
Vancouver Sun

Already deep into merchandising efforts that include lunch boxes, bedsheets, action figures and lampshades, the Vancouver-based, computer-animated TV series *ReBoot* is stretching ever further to produce films for IMAX Corporation, to be released next spring.

Ian Pearson, one of *ReBoot*'s creators and an executive producer at Vancouver's Mainframe Entertainment, says the company is currently producing two short *ReBoot* episodes to be screened in IMAX Ridefilm locations around the world.

The Ridefilm theatres, which are actually motion-simulation rides that pitch and roll with the onscreen action, feature a 180-degree wrap-around screen and high-quality surround sound that envelops the viewer.

"It's a totally immersive experience," Pearson said of Ridefilm. "It's like a roller coaster without the danger."

The closest Ridefilm theatres to Vancouver, however, are at Toronto's Palladium and in Las Vegas.

The *ReBoot* series, which airs on YTV in Canada three times a week, is staged in the microprocessor world of a computer mainframe, where the computer guardians are locked in constant struggle with an evil virus named Megabyte.

The show began a successful run on ABC in 1993, and has since branched out to air on more than 100 TV stations in the U.S. and in 50 countries. In animation-crazed Japan, where the show is aimed at adults rather than children, it enjoys a prime-time slot on the pro-

gramming roster.

When *ReBoot* first aired, it was the only three-dimensional animated program to use computer-generated imagery (CGI) exclusively. Now, Mainframe produces another CGI show, *Beast Wars*, and has a third in the works.

Television is only one aspect of Mainframe, and Ridefilm could be a springboard to new opportunities. "It's a good step for us into the realm of feature films," Pearson said.

He said there's also a good chance *ReBoot* will end up on the mega-screens of full-size IMAX theatres. The high-resolution of the 70-millimetre IMAX film may be rendered even sharper by LCD crystal stereoscopic viewer glasses, currently in development, that will produce a clarity he described as "unbelievable."

And if that weren't enough to keep Mainframe animators and programmers working late nights and long hours, Pearson said the company's games division is working with Electronic Arts, a U.S.-based computer game production company, to develop a *ReBoot* game for the Sony Playstation. He hopes it will reach the market by next February or March.

Despite the success of Mainframe and the widespread popularity of *ReBoot*, Pearson said it's still hard to lure top-notch senior animators away from the bright lights of Hollywood based on a TV reputation.

"We just can't get staff, that's the only problem," Pearson said. "It'll take feature films to get the cream back up here."

CGI-TV: "Beast Wars" Tackles Technology

By Michael Mallory

CGI maven Christopher Brough is breathing a little easier these days. After battling thousands of software problems in order to get television's first 100% computer-animated series "ReBoot!" on the air, the president of the ground-breaking Vancouver CGI shop Mainframe Entertainment is declaring his production system virtually glitch-free. So much so that as Mainframe's animators gear up for a brand new all-CGI series, titled "Beast Wars," the only bugs they are encountering are the insectoid members of the cast.

In fact, Brough is calling "Beast Wars" — an action-oriented sci-fi/adventure produced by Toronto's Alliance Communications in partnership with U.S.-based Claster Television — the easiest series he has ever experienced. "We started production in early January and we were on the air in April," he says, referring to the two-episode miniseries that aired in syndication as a teaser for the series' debut this fall.

This represents a quantum leap from the shop's startup with "ReBoot!" which premiered on ABC in September of 1994. The first episode of "ReBoot!" took 17 weeks to complete, while the most recent one, delivered in March, took only 19 days. Deadpans Brough: "We've had a bit of a learning curve."

The rocky start was hardly surprising given the task at hand: developing a CGI system that could deliver a weekly half-hour of full computer animation under the rigors of broadcast television. "Most computer animation prior to that had been a few seconds here and there for commercials, or a few minutes within a feature film, so this was a pretty tall order," says Steven DeNure, president of Alliance Multimedia.

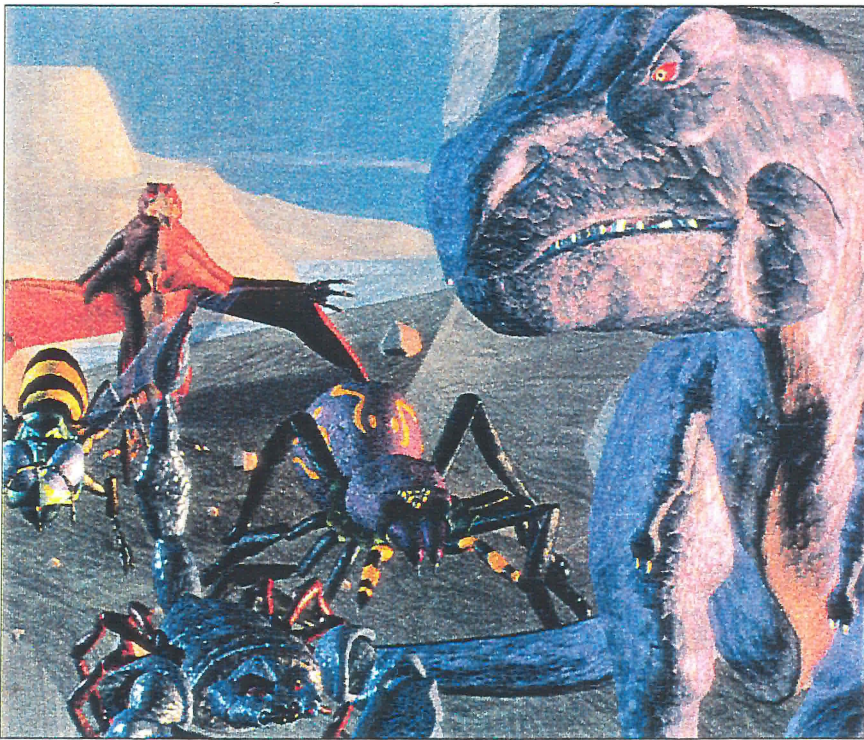
The challenge was taken up ini-

tially by U.K. animators Ian Pearson, Phil Mitchell, Gavin Blair and John Grace, known collectively as The Hub, who created "ReBoot!" and designed and built the system to make it. But the process was not helped by the small episode orders found in network television — 13 episodes for season one and 10 for the current season. "Frankly, that kind of order is difficult to deal with in terms of economy and scale," says DeNure, who points out that "Beast Wars" will start out with a "critical mass" of 26 episodes. Still, he praises ABC (which will drop "ReBoot!" from its Disney-fied Saturday morning lineup this fall) for its initial commitment and tolerance as the problems were being worked out.

And the problems were staggering. "We had enormous problems with texture mapping, with rendering, with finding a file server and creating an interface network internally that could handle the file sizes that this amount of animation required," says Brough. "Last Monday, for example, we dumped down 36,000 frames of animation in a single day, so you can imagine the demands that type of volume makes on our internal technology."

Mainframe employs seven full-time software developers whose job is to create software that enable the animators to do what they do best — animate. From a base of Softimage the studio has developed such customized software as "Grin," which

continued on page 100



BEASTLY: For the all-new CGI series "Beast Wars," Vancouver-based Mainframe Entertainment employs seven full-time software developers whose jobs are to create software that enables the animators to do what they do best — animate.



GETTING BETTER: *The first episode of TV's all computer-animated series "ReBoot!" took 17 weeks to complete, while the most recent one, delivered in March, took only 19 days.*

from page 98

allows for a full range of facial expression and emotions as well as dead-on lip-synch; "Hand Modelers," which controls hand movements (unlike his distant cousin Mickey, "Beast Wars" rodent character "Rattrap" has 10 fully articulated fingers); and "Walk Cycle," which stores in memory the characteristic movement of each figure.

The company's proprietary techniques have extended to the hardware as well. "We have the ability to, on demand, call up over 18 hours of uncompressed digital video from any one of our 73 [Silicon Graphics] workstations, which allows us to auto-conform animation so that our online capability has increased tenfold," says Brough.

While the base technology and key production elements (such as the innovative use of surround sound) is the same, and many of the key "ReBoot!" team also is working on "Beast Wars" — DeNure, Brough and Pearson, along with Stephen Reichel are executive producers — the two series are worlds apart thematically. Whereas "ReBoot!" is a highly stylized fantasy-adventure set inside a computer, the action-oriented "Beast Wars" (a continuation of the successful Transformers franchise) takes place on a barren Earth-like planet where robotic aliens transform into the

Great care is taken with subtle details and production values, such as the lighting play that models the characters' faces in close-ups.

planet's native animals, past and present, all of whom are rendered and animated with painstaking realism. Optimus Prime, the leader of the valiant Maximals, transforms into a gorilla, while his arch enemy Megatron, the power-hungry commander of the evil Predacons, changes into a silky-voiced tyrannosaurus rex. The rest of the animal cast is comprised of a wasp, scorpion, rhino, rat, cheetah, tarantula, pterodactyl and a velociraptor, which, in case you missed "Jurassic Park," is another breed of dinosaur.

Creating such organic forms after years of working with the comic book world of "ReBoot's" Mainframe City, was the main challenge left to "Beast Wars," according to Brough.

"We wanted to branch out and [animate] some animals and insects and leaves and trees and objects that may be a little more recognizable, and basically push the envelope in our abilities to create CGI."

Great care also is being taken with subtle details and production values, such as the lighting play that models the characters' faces in close-ups. To underscore the importance of lighting for dramatic effect, the studio brought in a cinematographer from television's moodiest hour, "The X-Files," to give a series of lectures to the key animators. Visual effects wizard Douglas Trumbull also has been a guest speaker at Mainframe.

Another unusual move by the studio is the decision to use live-action directors whenever possible in order to shake the visuals out of the proscenium-style framing that characterizes most TV animation. "We find that traditional animators from a directorial standpoint may be a little limited," Brough claims. "They may be a little too linear and a little afraid to move the camera."

While the system has been streamlined in terms of production time — Brough proudly states that all of his 30-odd animators now can turn out a half-minute of fully-rendered animation a week, with some of the seniors topping two minutes — it is still, by kidvid standards, a costly pursuit. Factoring in the

research and development and setup costs, Brough estimates that the first episodes of "ReBoot!" cost upward of \$900,000 each, although new episodes are coming in for considerably less than half that. As Sally Bell, executive vice president of Claster Television, points out: "You really, really have to believe in your concept to put in the kind of money that this is costing."

Bell also stresses the importance of matching the technology to the concept of the series. "You want to make sure that the technology you use, whether it's computer-generated, real-time computer-generated or whatever, fits the property and enhances the property and that you don't use it just because it's the newest thing that year," she says. "We have a very futuristic concept in which characters are constantly changing their shape and changing from one kind of thing to another, and this technology was made for this story."

Despite "ReBoot's" network cancellation, Alliance/Mainframe is producing 16 new half-hours for the syndication market, in addition to the full slate of "Beast Wars" episodes, a measure of how far the studio's production and delivery system has come. Brough, however, feels his company's pre-eminence in the realm of CGI television production has to do with more than just technological advancement.

"I think one of the keys to our success, frankly, is that we don't approach producing animation with computers like we're forcing a square peg in a round hole," he says. "We look at what computers can do, what the technology is best suited to, and re-reference our demands from an artistic standpoint in creating the product. Yes, we have a lot of software we've created, and we've got a lot of proprietary techniques, but it's almost a philosophical approach to the thought in the first place that separates the men from the boys."

Not to mention the Maximals from the Predacons. ■

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ELECTRONIC

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- * ON THE DIGITAL SET OF A NEW CARTOON FROM THE MAKERS OF REBOOT
- * GALLERY OF PACKAGING DESIGN
- * WEB ADVERTISING: FOR A PRIMER ON BANNER ADS, CLICK HERE
- * OUT OF SIGHT: AN EYE-OPENING ANNUAL REPORT



Behind the Beauty of the Beast

Vancouver's Mainframe Entertainment, whose ReBoot series gave kids of all ages the first taste of a fully computer-animated cartoon, now applies its digital virtuosity to breathing life into a new generation of Transformer toys

BY DEBRA SYKES



ReBoot, THE PROJECT THAT established Mainframe Entertainment, was the first ever animation series created entirely on computer.

BEAST WARS' DIGITAL CAST: Five Maximal heros (right) battle five villainous Predacons (below) for control over Energon, the planet's energy source.



Some people might say that the animators at Mainframe Entertainment are kids at heart. Crazy ceramic knick-knacks, plastic figurines and little stuffed animals sit atop their computers. Someone fires a Nerf gun, misses his neighbor and tries again. Sure, they may work 14-hour days producing some of the most sophisticated animation seen on television, but when the digital-graphics wizards at the Vancouver-based animation studio received a box of colorful plastic robotic animals in the mail from Hasbro, the famous toy-maker, it was playtime. Soon, however, it is back to the task at hand: bringing the characters to life in the form of a 3D-animated cartoon series.

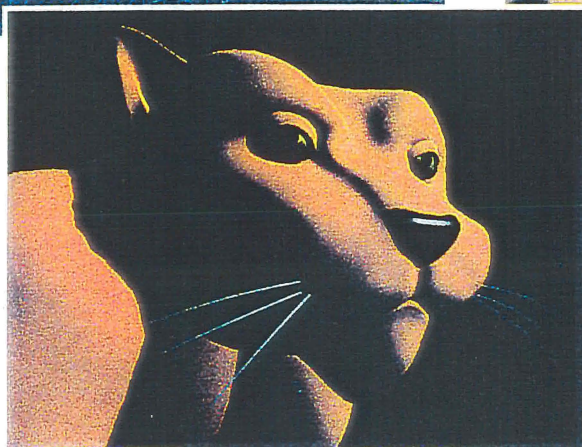
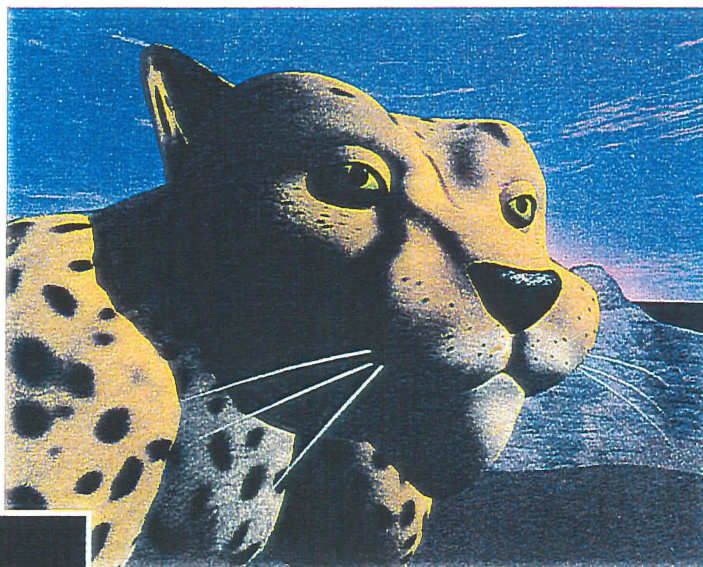
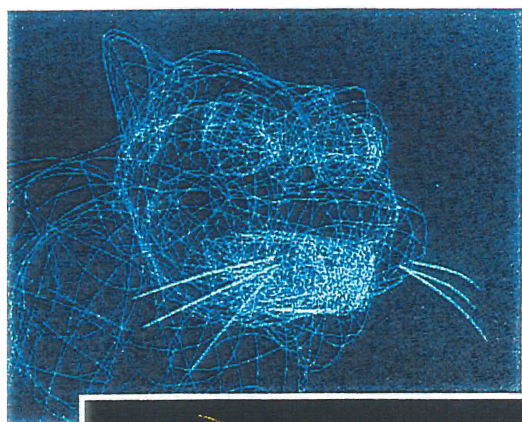
Building on the equity of the hugely popular Transformer robot toys of the 1980s

that metamorphosed into the shapes of race cars, jets and motorcycles, Cincinnati-based Hasbro had recently launched an updated Transformer line, composed of insects, dinosaurs and jungle creatures possessing the same "shape-shifting" powers as their predecessors. Looking to repeat the success of the first Transformer cartoon series, the toy-maker approached Mainframe to script and design a 26-episode, action-packed, 3D-animated drama around the new action figures.

Mainframe had already established its credentials with *ReBoot*, the world's first full-length, completely computer-generated animation series. The TV cartoon, which has won three Gemini animation awards since first airing in September, 1994, introduced television audiences to realistic, three-

dimensional characters that had none of the jerky movements and blocky outlines that characterized previous generations of the form.

Unlike *ReBoot*, which was conceived and developed totally by Mainframe (with Toronto-based Alliance Communications as executive producer), the story and characters for the new *Beast Wars*—called *Beasties* in Canada due to concerns about using the term "war" in the title of a children's program—are based on Hasbro's toy figures. The half-hour weekly series tells the story of the Maximals (the good guys) and the Predacons (the bad guys) who fight for control of an energy source found on the planet on which they have both crash-landed. In battle, the animal characters transform into robots.



MODELING: To create the characters, the animators first had to consider each figure's physical capabilities. Into such geometric "primitives" as spheres, cubes or cylinders the modelers inserted digital skeletons (programmed in Softimage) to allow the characters to bend, twist and flex. "Our goal was to give each figure as much range of movement as possible," says supervising animator Adam Wood, "which meant keeping a close eye on proportions so that if a character raises his arm, he is not always hitting his forehead." Onto these models the designers programmed facial expressions and then connected the body parts.

The successful debut of the two-part pilot a few months ago brought to fruition the labors of a 50-person production crew at Mainframe. The process began late last year when, with the plastic toys and pencil-drawn models of the Hasbro figures in hand, Mainframe staff began preproduction by designing the series' non-animated aspects, such as the sets and props. Split into four teams, 32 animators then proceeded to complete four episodes in eight weeks. (Production is scheduled to finish this February.)

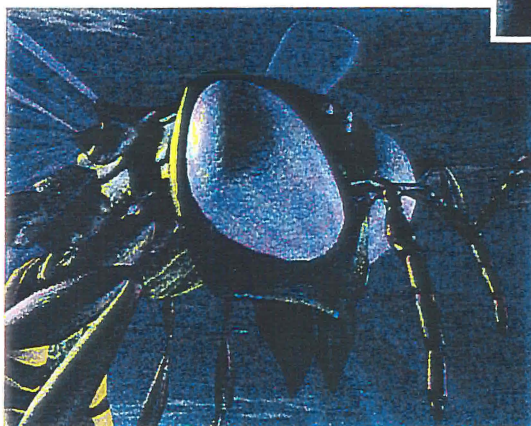
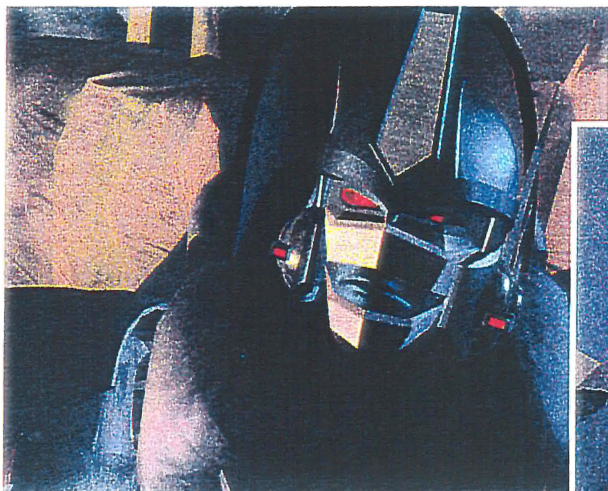
From the beginning to the end of the process, the scenes, characters and effects never leave Mainframe's network of 36 Silicon Graphics workstations, each equipped with up to half a gigabyte of memory. A central file server, with over a dozen 9-GB storage disks, archives the working and finished files, which individual animators can access over the network from their computers.

"Everything is kept digital for all the time it's here, right up until the final broadcast tapes, which are digital as well," says Phil Mitchell, Mainframe's VP of operations. "If you tour a conventional film studio, you will see movie sets lying around. We have essentially the same thing, only ours are digital."

With the script as a guide to the actions the characters are called upon to perform, the animators start building the wireframe skeletons, using the modeling tools in Microsoft's Softimage software to shape basic geometric forms such as spheres, cubes and cylinders into 3D gorillas, rats and pterodactyls, along with their respective robotic incarnations. During this stage, Hasbro's design team closely monitor the production, regularly viewing tapes of Mainframe's work-in-progress to ensure the models accurately reflected the toys. Because the action figures' movements are limited and their facial expressions carica-

tured and static, "the hard part for the animators is to make the characters look like the toys, yet to get them to move, talk and act the way the animator wanted," says Mitchell. "If, on that 45-inch television screen, [the character] Waspinator does not look like the toy, kids will riot."

Once the character models are approved, the animators moved on to constructing the digital sets, such as ship interiors and bridges, and the various mountainous and tropical terrains. To produce believable landscapes, they often refer to videos and pictures in books, as well as architectural drawings and photos the staff took of local land formations. (Standard backgrounds are reused in the episodes for the sake of continuity.) Onto these 3D constructs of locations and characters, the animators then assign surface attributes through texture-mapping. Along with color, they computer-render shiny, leathery, dull or



TEXTURES: Using the texture-mapping capabilities of Softimage, the animators programmed surface attributes directly onto the wireframe models to generate, for example, the scaly skin of Waspinator or the metallic outer layer that covers Optimus in robot form. It took a significant amount of research to make the skins look believable. Mainframe's Phil Mitchell, for instance, notes that Optimus in beast form would look unrealistic without wrinkles and a shine to his fur. "We looked at a whole lot of gorilla pictures. It really paid off when creating the detail seen in the character's face." Animator Adam Wood points out, however, that generating the texture maps is not the key creative issue; rather, the challenge lies in layering them together to produce smooth, natural-looking variations in the surface.

wrinkled surfaces for body forms, faces and fur, as well as grass, rocks and sky.

With the characters and environments in place, the animators then compose each scene by pulling together the required elements from the central computer archive and arranging them according to the director's instructions. With the director's supervision the animators use the Softimage camera tool, positioning it at different angles to ensure the best perspective for each scene.

Next, the animators turn their attention to lighting the digital world the characters occupy. "The trick is to design the same overall light for each scene, which can then be slightly modified for different shots," explains Mitchell. "Many of the digitally stored sets are already lit so that, for example, the Maximal Control Center looks the same whenever it appears in a scene." Maintaining consistent lighting and ambience through all the episodes

is Mainframe's biggest challenge. Supervising animator Adam Wood notes that while computer-animated cartoons can incorporate much more subtle lighting than traditional animations—marking, for example, the gradual change from day to night—this makes continuity much harder to achieve. "In that sense, digital animation is halfway between film and animation," he says.

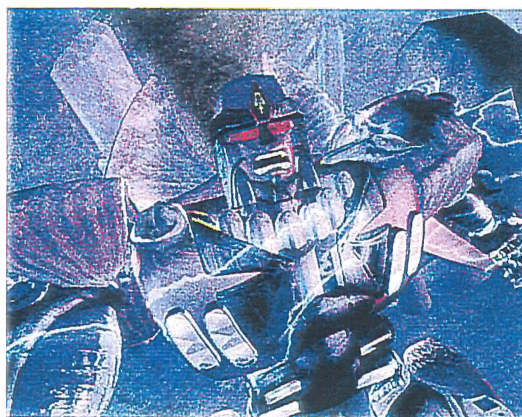
To give the characters the power of speech, voice actors record the script onto DAT, which is fed into an Avid offline video-editing system and edited by the director. The creative team then produce a digital storyboard that fits the pictures to the sound—essentially, a sequential series of hundreds of digital snapshots of the characters positioned within the scenes. To produce the animatic, the editors cut the sound and pictures together, matching the characters and sets to the dialog.

One of the animators' toughest tasks is to

realistically synchronize the characters' facial expressions with the dialog. Unsatisfied with existing commercial software, Mainframe staff wrote their own program, called Grin—a souped-up version of an existing Softimage module, says Wood. Grin gives the animators complete control over the complex movements of the characters' features, allowing them to produce such effects as wagging ears and wrinkled brows, and to shape the mouths to match words, growls or yawns. "Without [Grin], it would take too long to do the lip-syncing and facial movements because we would have had to hand-key all of it through Softimage," says Mitchell. "This way, we can have a top-notch, 10-second piece of dialog in one hour, compared to two days."

But making the characters speak believably requires more than precise synchronization; it also takes considerable imagination. "I mean, what does a talking rhinoceros look

SPECIAL EFFECTS: If a character absorbs too much Energon (the energy source each needs to function) when in robotic form, bolts of energy burst through him. To achieve this effect, the designers applied an animated 3D procedural map over the surface of the character. The background of this scene forms one layer; the character's body forms another; and the Energon effect the third. The layers were rendered separately and composited together in an online edit suite to save time.



When flying, the robotic Optimus's rocket packs emit a glowing fireball that, in this frame, illuminates his left leg. For this effect, the animators created three mattes (stencils)—the rocket's fireball, Optimus's left leg, and his left arm—each one masking off a part of the image. The special effect thus appears either as an underlay (under the left arm) or an overlay (the fireball and the glow effect over the leg).



FACIAL EXPRESSIONS: A shocked Cheetor watches Optimus duel to the death. When the Maximal leader appears to lose, Cheetor is overcome with sadness. Close-ups like this one can be dull and distractingly artificial without proper lip-syncing and realistic facial expressions. The Main-frame animators relied on custom-

developed software called Grin, which allows them to contract facial muscles, move the tongue, jaw and lips by small increments, and to preview the results in real time. Some characters, such as the gorilla with the humanoid face, were relatively easy to lip-sync in comparison to such others as the prehistoric bird with a giant beak. To speed up the process, the team drew on a library of basic mouth shapes and expressions of the different characters, captured from various angles and distances, which they then refined for individual scenes.

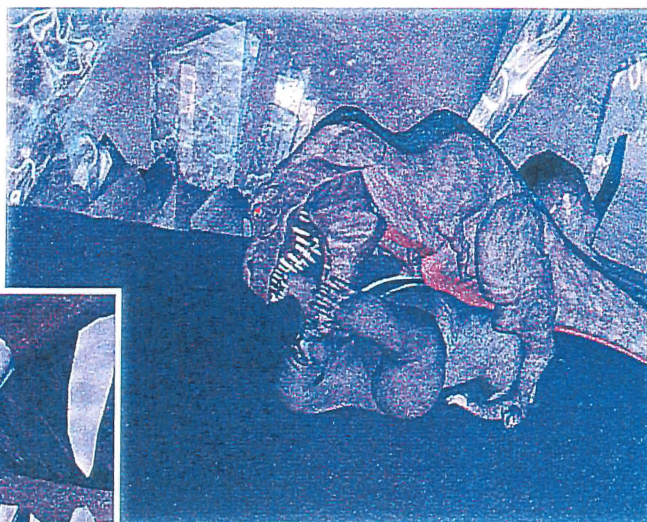
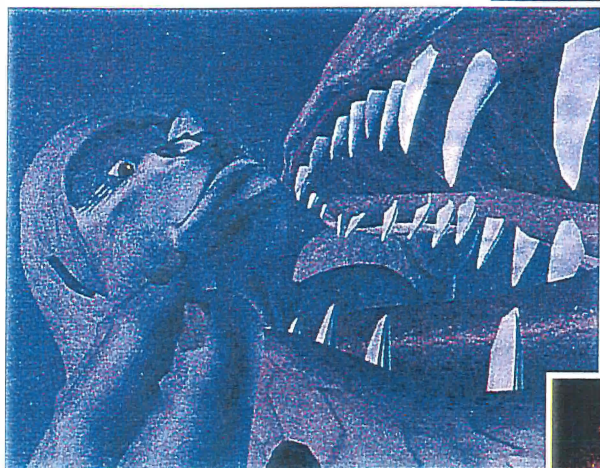
like?" asks Mitchell. "At first, I just could not get my head around that. It comes down to a lot of trial and error. We did plenty of that with *ReBoot*, so with *Beast Wars* we were well prepared." Since every facial movement is stored digitally, the animators can adapt close-up sequences to different scenes and dialog, saving time and maintaining character consistency.

Once the characters speak and express themselves credibly, the animation team attends to body movements, posing the fig-

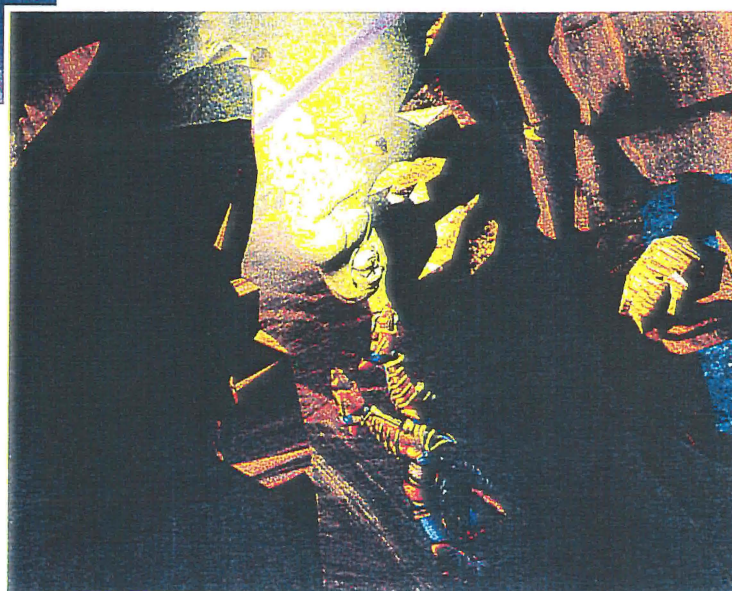
ures frame by frame in relation to the words and action in the script. It is during this stage, says Wood, that the animators have a chance to really flaunt their creativity. "With *Beast Wars*, the animation possibilities are incredibly diverse, from exaggerated motions to subtle gestures to special effects. But you can't animate from outside. To create an effective character, you have got to *become* him—speak his words, make his facial expressions, and move the way he does. Since many animators work on the same character, it is a real chal-

lenge for us to maintain character continuity throughout the entire series." The animators go to considerable effort to match the demeanor and gestures to the personalities of characters like Rhinox, a slow-talking techie rhinoceros, or Terrorsaur, a scheming pterodactyl. By repeatedly playing back the sound and action, they refine the scenes, making Rattrap jump higher, for example, or Scorponok hiss more convincingly.

The final animation step involves fine-tuning the visual depth and angle of each



CHOREOGRAPHY: Simple movements, such as walking, running or riding a galloping gorilla (yes, the scene exists) were archived on Mainframe's computers. Pitched action sequences, however, featuring fights or falling rocks were too complex and specifically choreographed to be used repeatedly, notes Mitchell. Here, the animators captured the battle from different camera angles to bring variety to the action while carefully maintaining continuity. In the first two shots, Megatron tries to bite Optimus in the head, while in the third, Optimus clings desperately to Dinobot as they both hang on for dear life. "A library of generic animation could not capture this fluidity and excitement," says Mitchell.



shot in Softimage. Because the foreground and background images appear equally sharp in a computer-generated world, careful adjustments to the focal depth of different objects are needed to create a realistic 3D perspective. "If everything is the same intensity, it is very tiring on the eyes, and not very believable," says Wood.

After the director approves the scenes and lighting tests, the animators render out the final visuals—a task usually performed overnight when the machines are otherwise unoccupied. During the postproduction phase, every scene is double-checked to ensure correct assembly of the sequences; some scenes are composited from layers created separately

to ease rendering. The visuals, music and sound effects, such as wind and computer beeps (dubbed "googlaphonics" by Mainframe's animators), are then brought together to create the finished episode.

Mainframe's experience on *ReBoot* led to some refinements in *Beast Wars*' production processes. For example, to prepare for possible problems with hardware breakdowns or power outages, the company decided it would be more efficient to build in an extra margin of time rather than increase the staff. "Through years of working on *ReBoot*," says Mitchell, "we have developed a very efficient production method. If not for *ReBoot*, we never would have created *Beast Wars*."

Although the series' digital production is likely to attract notice in and of itself, Mitchell stresses that Mainframe is not trying to impress viewers with wild computer graphics. Rather, he hopes the storyline and characters will draw kids in, as traditional animation series have done for decades. "It is too easy to churn out something of lower quality and still be received as clever, just because it is computer-animated," he admits. "What is most important to us is telling an exciting story."

Mainframe Entertainment can be reached at (604) 681-3595. ☎

Debra Sykes is a freelance writer living in Victoria, BC.

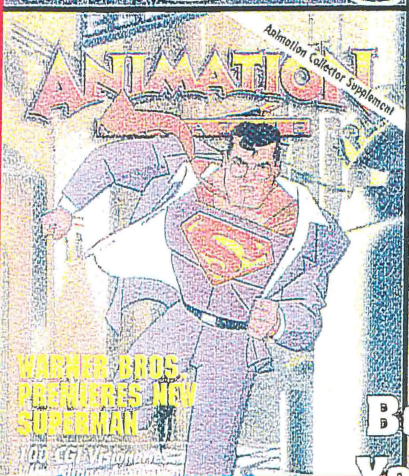
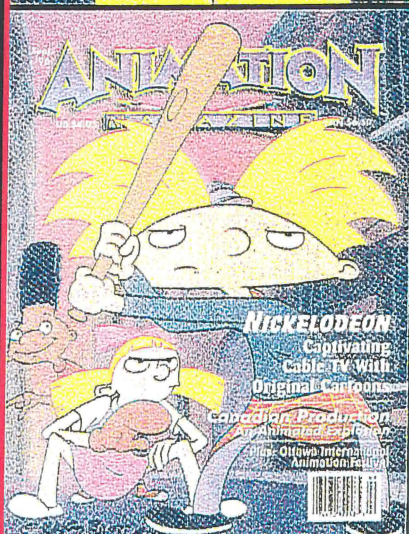
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Beavis and Butt-Head End
Year with Theatrical Debut

PERIODICALS POSTAGE PENDING

METALLICA

The Most Influential People in Animation

he dictionary defines influence as "the capacity or power of persons or things to produce effects on others by intangible or indirect means."

Most of the people cited below exert influence directly as well as indirectly. They're not the only ones in the animation business to have influence. To the editors of **Animation Magazine**, deciding subjectively and in a totally non-scientific way, these seem the most reasonable choices in an industry of outstanding management and creative talent. No effort was made to distinguish by degree of influence. Instead,

the choices range from Michael Eisner, who heads a multi-billion dollar behemoth to historian John Canemaker, who influences more through the pen than the P/L.

In an upcoming issue, **Animation Magazine** will be profiling key educators who influence the next generation of animation artists and executives. And while this list focuses on North Americans who influence what happens in animation, April 1997's issue will spotlight their counterparts internationally. — compiled by Morrie Gelman

BARRY BLUMBERG

Vice President
Development
WALT DISNEY
TELEVISION ANIMATION



With the acquisition of Capital Cities/ABC by Disney, Blumberg is positioned to make more of an impact on ABC's kids' schedule. He helped shape this season's *Mighty Ducks* and *Jungle Cubs*. He has a new slate of programs in production for next fall, including *101 Dalmatians* — *The Animated Series*, *Recess* and *Pepper Ann*. Blumberg helped develop the *Toy Story Treats* comedy spots for ABC Saturday morning. He came to Disney from Harvey Entertainment Group.

DON BLUTH and GARY GOLDMAN

Producer/Director
FOX ANIMATION STUDIOS



Now completing production on its first feature film, *Anastasia*, Fox Animation Studios, a unit of Fox Filmed Entertainment, is located on East Camelback Road in Phoenix. Animation vets Bluth and Goldman head the studio which started in August 1994. The two (with John Pomeroy) worked together on such popular family films as *An American Tail* and *The Secret of NIMH*. They also were responsible for the interactive laserdisc game, *Dragon's Lair*.

ALLEN J. BOHBOT

President and CEO
BOHBOT
COMMUNICATIONS, INC.



The media buying company Bohbot started in 1986 is now a leading independent distributor and producer of animated programming and one of the nation's largest purchasers of youth media. Bohbot began at Ed Libov & Associates, a New York media buying firm working on the Toys "R" Us account. He formed Bohbot & Cohn with another Libov staffer, Jerry Cohn, on the strength of the Toys "R" Us business. Subsequently Bohbot bought out Cohn.

CHRISTOPHER BROUGH

President and CEO
MAINFRAME
ENTERTAINMENT INC.
Vancouver, Canada



The executive producer of *ReBoot* and *Beast Wars*, Brough's career included time spent at Hanna-Barbera, Alchemy II Productions and DIC. His Mainframe Entertainment produces CGI animation from a modern digital production facility in British Columbia. *ReBoot* broke ground in 1993 as the first fully-CGI animated TV series. *Beast Wars* is in association with Alliance Communications and Hasbro Toy Group. An innovator, Brough also co-produced *Teddy Ruxpin*.

JOHN CANEMAKER

Chair of Animation Program
NEW YORK UNIVERSITY
TISCH SCHOOL
OF THE ARTS



Canemaker's influence is not only as an animation reviewer, historian and creator, but also in reaching students as an NYU professor. In addition, he's a character animation consultant for R/Greenberg Associates, the New York-based commercial animation firm. His six books on animation, include *Tex Avery: The MGM Years* and *Felix — The Twisted Tale of the World's Most Famous Cat*. He impacts globally as an artist, lecturer and jurist at animation film festivals.

EDWIN E. CATMULL

Executive Vice President/
Chief Technology Officer
PIXAR ANIMATION STUDIOS



Catmull, once managing director of Lucasfilm's Computer Division, co-founded Pixar in 1979. He's responsible for the continued development of Pixar's animation and rendering software. He's a pioneer in the development of computer-generated images and effects for film. The Academy of Motion Picture Arts & Sciences has twice honored Dr. Catmull (he has a Ph.D. in computer science) for his technical and scientific achievements in image compositing and rendering.

continued from page A23

mer movie audiences were wowed by the special effects of *Independence Day*, *Mission Impossible* and *Twister*.

In the episodic market, *ReBoot* has become one of the strongest performers in ABC's Saturday morning line-up. *Moxy* is using live-performance animation technology to bring next-generation characters to Turner Studio's Cartoon Network.

Three-D animation is also opening new creative frontiers in the broadcast arena. All three major U.S. networks — ABC, NBC and CBS — used 3-D on-air graphics to greatly enhance their November election coverage. Additionally, 3-D animation is at the heart of a new wave of 3-D commercials, including Nissan's innovative "G.I. Joe Meets Barbie" advertisement.

Nineteen-ninety-six brought landmark achievements in 3-D solutions. Alias/Wavefront offered breakthrough particle software that was more organic and which conquered one of the last frontiers — realistic "hair" — as

High-performance, real-time animation is no longer the special province of the technological elite.

demonstrated in the highly creative short-animation *the end*. And Discreet Logic, Softimage and Pixar also had breakthroughs with the introduction of their new 3-D products.

This year was also special for Silicon Graphics. Our company ushered in a new era of visual computing, introducing systems such as the O2 desktop workstation family, the Origin high-performance enterprise server family, and Onyx2 high-performance visualization supercomputers. All of these products deliver unprecedented performance for animation and entertainment applications.

As 1996 concludes, we anticipate seeing a host of important achievements and an even greater expansion of the entertainment markets in 1997.



Chris Brough

PRESIDENT
MAINFRAME ENTERTAINMENT,
INC.

Mainframe Entertainment Inc. produces 3-D computer animation for television, motion pictures, interactive media and motion rides from its state-of-the-art, 50,000 square foot digital production facility located in Vancouver, Canada, with a staff of over 160 highly skilled individuals recruited from around the world.

ReBoot broke new ground as the world's first 100 per cent CGI animated series when it began airing globally on television in 1993, and the series has since won numerous prestigious awards for its creative and technical innovation. Season one and two reruns are now airing in the U.S. and Canada, and continue to garner very high ratings and an extremely loyal fan base in 48 countries around the globe. Season three of the series is now in production, and will air internationally in 1997.

Mainframe has continued to improve its technological achievements and to broaden the scope of its projects, including a partnership with world games' leader Electronic Arts to co-produce a real-time game based on *ReBoot*, scheduled for release in early 1997.

In January 1996, Mainframe signed on to produce a second computer animated TV series, *Beast Wars*, in association with Alliance Communications and The Hasbro Toy Group. Within four short months the series was being broadcast. This reinforces the fact that Mainframe has developed solid production methodolo-

gy and techniques during the first two seasons of *ReBoot* that can now be carried over into other productions.

The latest addition to Mainframe's diverse product line is the production of two movie rides based on *ReBoot* for exhibition on the IMAX® *Ridefilm*™ motion simulation system. Produced in association with IMAX Corporation, the pioneer and leader in giant-screen and movie ride technology, the rides are due for release worldwide in spring 1997.

Mainframe Entertainment also develops and owns a number of proprietary software programs that enhance and accelerate animation production processes, and manages a highly successful merchandising and licensing program based on its properties.

But perhaps the most personally satisfying accomplishment in 1996 was Mainframe's ability to gain out financial independence after only three years of operation. We are looking forward to some exciting new projects in 1997, so stay tuned!



Martin Hash

OWNER/CEO
HASH INC.

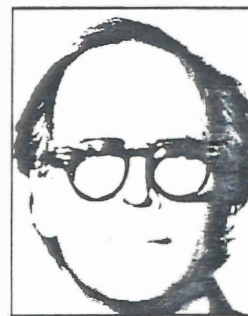
Animation is hard, and adding computers to the mix is explosive. My father says, "Anything you can do with a computer you can do faster with a chisel and a stone tablet, and you don't lose your data."

Computer animation has always promised more than it can deliver: this comes from the fact that the programmers making the promises are unsophisticated in animation; but equal naiveté rests on the animators who believe everything they see at the movies.

As a result, there has been some friction between the two parties due to false expectations, but this is nothing more than any new industry endures.

To be fair, until this year, the computers needed to accomplish a big animation project were only available to the moneyed elite. Luckily, inexorably, computing power is increasing, and the price is falling, giving more independents access to the technology. In fact, 1996 was the first year of mainstream acceptance of the computer as an animator's tool (it's the implication that the computer is the animator that causes the problems).

Hash has always targeted the price sensitive market and we also have great success catering to the entry level. In the past, the only people who would make the effort to understand how to use computers were programmer types, so they were the ones doing the animation and designing features that sounded cool to their friends. For their part, artists, egalitarians that they are, dismiss programmers as little more than gas station attendants eager to do their bidding and deserving no more respect than a paint brush. "Martin Hash's 3-Dimensional Animation" has done a lot to foster trust between the two, through non-exploitative pricing and personal product support. Our customers will walk on fire to help us and we try to return that loyalty.



John Hughes

PRESIDENT
RHYTHM & HUES

This has been the best year yet for Rhythm & Hues. Without question, the most

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THE GREAT ANIMATION DEBATE

BY AUDREY DOYLE

Which is the better technique
for animating characters in a
television series: keyframe
animation or motion-capture
technology?

When animators at Mainframe Entertainment set out in 1994 to produce the half-hour 3D computer-animated TV series *ReBoot*, they had three options: they could produce it using keyframe animation techniques, motion-capture technology, or a

Entirely keyframe-animated, *ReBoot*—currently in pre-production for its third season—made history two years ago as the first animated TV series to be entirely computer-generated. To create this series, animators at Mainframe Entertainment use primarily Microsoft's Softimage running on SGI workstations, along with Grin, a proprietary program designed to speed up the facial animation process.

combination of both. Keyframe won, hands-down.

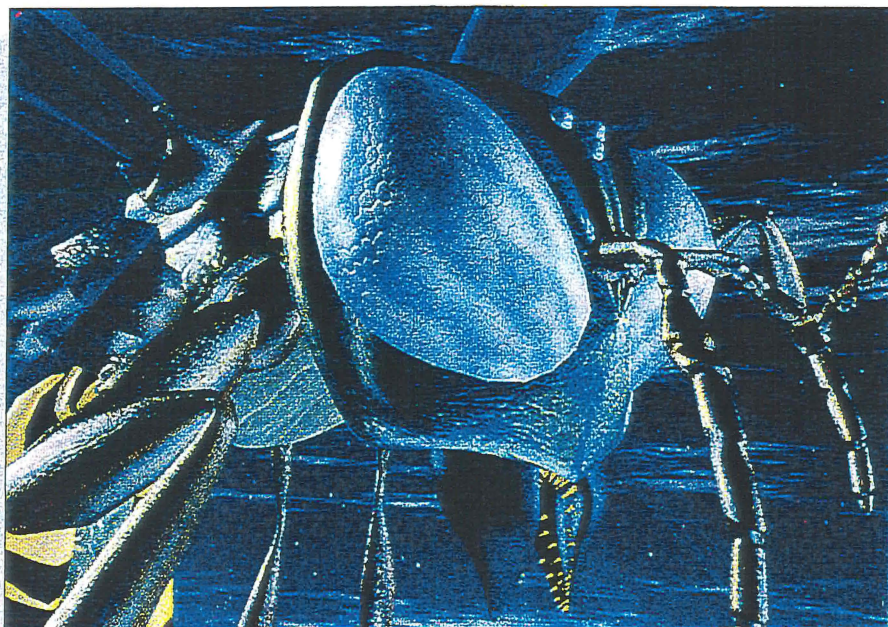
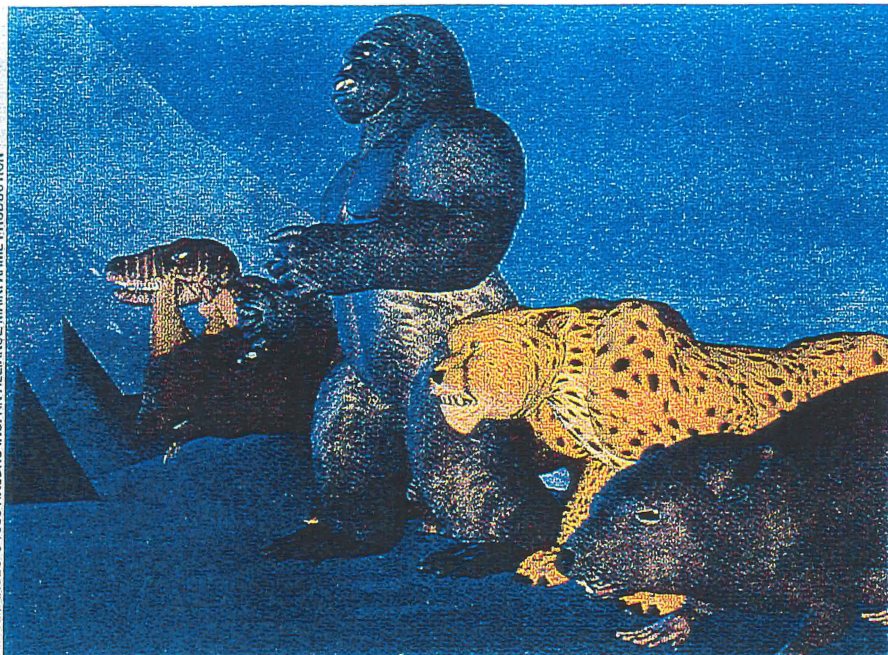
"There's still absolutely no other way of doing what we do," states Phil Mitchell, vice president of operations at Mainframe (Vancouver, BC). "We definitely can't use motion capture; it's so much slower than keyframing."

Animators at Buzz F/X (Montreal; Santa Monica, CA) hum a different tune. For the new 2D/3D half-hour cartoon series *The Real Adventures of Jonny Quest*, Buzz is animating all of the main characters in the 3D sequences via motion-capture technology. "Keyframe would take

Audrey Doyle is managing editor of CGW.

ReBoot Season 2, An Alliance/BLT Production





Although *Beast Wars* will star a total of 16 characters by the end of its first season, Mainframe Entertainment is animating this series via keyframe animation rather than motion capture. Why? Because according to the company, there isn't a satisfactory motion-capture system that will let you capture an actor's performance and then quickly manipulate the data.

way too long," says animator Thomas Thorne.

Now, wait just a minute. One says motion capture is too slow, the other says keyframing is too slow. And each can argue passionately that the technique he uses is superior over the other. So, who's right?

Actually, it appears they both are. While motion-capture technology has been touted as a quick and easy way of getting motion into a computer for animating characters, it has associated with it a number of limitations that may lessen its cost-effectiveness for some television productions. On the other side of the coin, although many in the CG animation community have looked at keyframe animation as being a laboriously slow process—certainly too slow for use in creating a weekly half-hour TV series—it does appear to have distinct benefits that, for some productions anyway, can far outweigh its limitations.

The Case for Keyframing

Take *ReBoot*, for instance. This half-hour, Saturday-morning children's cartoon, currently in pre-production for its third season, made history two years ago as the first animated TV series to be entirely computer-generated. At that time, people said it would be impossible to create an entire season of *ReBoot*—13 episodes, each 21 minutes in length—using only keyframe animation.

Today, Mainframe is producing not only *ReBoot* but also *Beast Wars*, a new 3D CG weekly TV series also entirely keyframe-animated. For the first season of *Beast Wars*, which began airing in North America at the end of the summer, Mainframe is creating a total of 26 half-hour episodes. For both productions, they're using primarily Microsoft's Softimage (Redmond, WA) running on SGI workstations, along with Grin, a proprietary program designed to speed up the facial animation process.

"Sure, there were skeptics; there probably still are," Mitchell says of the practicality of using keyframe for both *ReBoot* and *Beast Wars*. People have found it hard to believe, he says, that Mainframe can create four episodes of each show in eight weeks, with a team of only eight animators, a director, and a supervisor working on each episode. Even the director of *Beast Wars*, J. Falconer, was concerned when he came on board during the creation of that show's ninth episode. "I was exceedingly skeptical that it could be done," he admits, "considering that I come from a traditional animation background and we spend eight weeks doing a 30-second commercial."

But all you have to do is tune in to television in North America on Saturday morning and you'll see an episode of *Beast Wars*, and in Canada pretty much any day of the week and you'll see an episode of *ReBoot*, says Mitchell. "So, if it's impossible," he asks, with a slight hint of sarcasm in his voice, "how does it get done?"

How *does* it get done? "By having people who are very skilled animators," he states. Adds Ken Ball, supervising an-

imator for *Beast Wars*, "Keyframe animation is actually a workable process, especially given the software we use—Softimage. Once people get the knack for keyframing, it becomes very intuitive and fast."

Mainframe did look into using motion capture when it first began production on *ReBoot*. But according to Mitchell, there wasn't (and still isn't) a satisfactory system that will let you capture an actor's performance and then quickly manipulate the data. He goes on to cite three primary reasons why Mainframe chose not to animate the *ReBoot* and *Beast Wars* characters using motion-capture technology.

First, he says, "Say you put motion sensors on a person and have him walk across a room—a very simple thing, or so you'd think. Because after you've captured that information, you then have to edit it, and it could take hours—sometimes days—to tidy it up! The disadvantage to this is that if the director then goes, 'well, I really like this walk, but I'd like the character to move around this object,' you have to grab the whole performance all over again. That makes things pretty slow."

Another reason is cost. "Cost is very much dependent on the amount of time it takes you to do something," he says.

"If we were using motion capture for these shows, I doubt very much whether we'd have more than one motion-capture studio in the building. Which means that I could only ever work on one shot at a time." Add to this the cost of the team of technicians to run the system as well as the fee for the actors, "and it adds up rather quickly," he says.

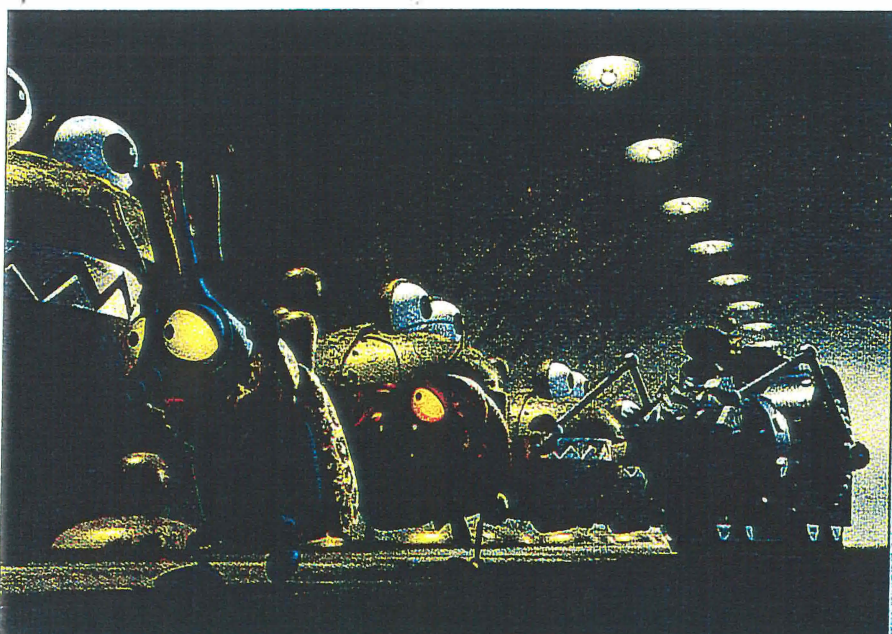
A third reason has to do with the practicality of using motion-capture systems for animating the large number of characters starring in *ReBoot* and *Beast Wars*. There are nine main characters in *ReBoot*, backed up by a large ensemble of secondary characters. And by the end of the season for *Beast Wars*, there will be 16

characters in that show, Mitchell says. "So with motion capture, what do you do—hire 25 actors? Hire two actors to play [several] characters each?

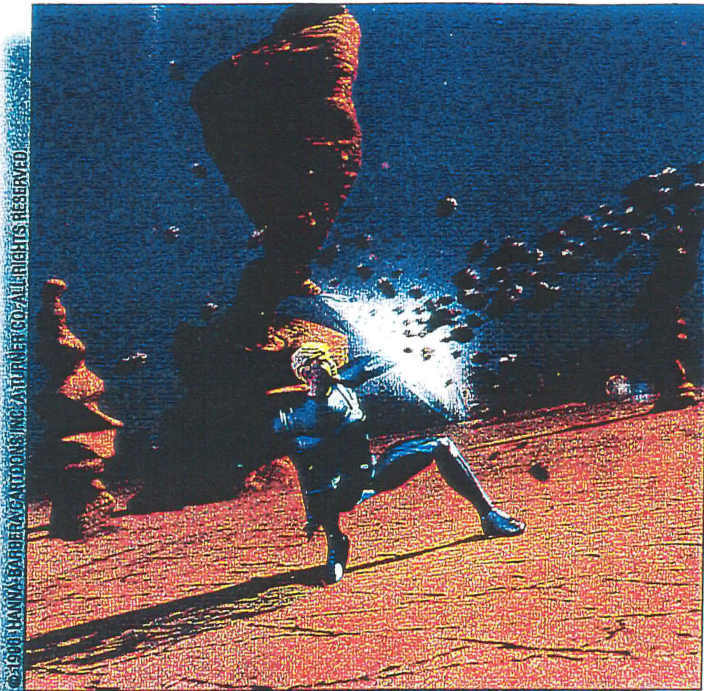
"And what about the non-human characters in *Beast Wars*?" he continues. "How would we go about animating, say, a spider? Get a spider and put motion sensors on it? It's going to be a little difficult getting a performance out of that character. Or do you do it with a human and bolt on an extra four limbs and then animate them somehow?"

According to Mitchell, it also isn't practical to produce either of these shows using a skeletal input device, such as Digital Image Design's (New York City) Monkey or the Puppet Works product from TRF Inc. (Burlington, Ontario). "If we had a scene where there are eight characters fighting, we'd have to have eight [of these devices] that were fully movable, not only in what the

For *Fantôme*, the decision to go with keyframe vs. motion capture in its *Insektors* series will have to do with the scene being animated: simple scenes will be animated via motion capture, while complex scenes will be animated via keyframe animation.



© 1995 FANTÔME ANIMATION



The Real Adventures of Jonny Quest is mainly a 2D cel-animated cartoon, but whenever Jonny and the other characters travel into a virtual world Jonny has created, everything—including characters and sets—is 3D CG. Although animators at Buzz F/X use keyframe techniques for tweaking and for creating some secondary characters, all of the main characters are animated by a motion-capture service bureau.

portions may not be entirely precise. "If the actor's reaching for the object, and then, when we import the data into the animation it doesn't look like he's actually touching that object, we can tweak the data so it looks like he's touching it," he says.

At this point, Mainframe's decision to continue using keyframe for *ReBoot* and *Beast Wars* and Buzz's decision to continue with

the Buzz animators are producing anywhere from 30 seconds to 13 minutes of 3D CG anima-

tion approximately every 10 days. motion capture for *Jonny Quest* are pretty much set in stone. "I'm not saying we won't ever use motion capture," says Mainframe's Mitchell. "If a project comes along that warrants [its use], then we'll take a look at it. But *ReBoot* and *Beast Wars* will carry on being keyframe—that's the way they look, that's the way they work best for us."

Adds Buzz's Provost, "Even though motion capture can be awfully limiting, the benefits of getting this production flowing as an ensemble outweigh having somebody tweak an entire keyframe motion sequence for two weeks. For *Jonny Quest*, we're putting out 52 half-hour episodes per season, so we can't have that. Any time you're dealing with that kind of volume in that amount of time, you don't really have a choice."

The Best of Both Worlds

Although Mainframe will use only keyframe for its shows and Buzz will use only motion capture for animating the main characters in *Jonny Quest*, there are some production studios that have found that a combination of the two technologies works best. At Medialab (Paris), for instance, animators working on the forthcoming 3D animated TV series *Donkey Kong Country* have come up with their own production recipe: 70% real-time performance animation, 30% keyframe animation.

"We're mixing for a variety of different purposes, one of which is cost-effectiveness," says Maia Tubiana, production executive of *Donkey Kong Country*. "For us, using performance animation brings down the cost vs. having a 100%

limbs were doing but also [in terms of] the characters' position in space." Plus, he says, all the characters are different sizes, so each CG representation would have to be precisely scaled. "In certain applications, [these devices] might work fine, but for what we're doing, it's quite limiting," he notes.

Slow. Expensive. Impractical. All of these are, according to Mitchell, the primary limitations Mainframe has found with motion-capture technology. The animators at Buzz F/X agree—and they add to this list what they say is the most obvious limitation: WYCIWYG, or What You Capture Is What You'll Get, emphasizing the extreme importance of well-directed and talented actors. Yet, for *The Real Adventures of Jonny Quest*, these guys have nonetheless chosen to use motion capture over keyframe. Why?

"Because the benefits for us definitely outweigh the limitations," says Paul Provost, technical director for motion capture at Buzz.

Based on the hit 1960s prime-time series *The Adventures of Jonny Quest*, this new action/adventure cartoon is produced using a combination of 2D cel animation and 3D CG animation: most of the show is 2D, but whenever Jonny and the other characters travel into a virtual world Jonny has created, everything—including characters and sets—is 3D. Depending on the storylines for each show,

tion approximately every 10 days.

According to Buzz, the animators are using Microsoft's Softimage, Mental Ray, and Eddie for *Jonny Quest*. And although they admit they use keyframe techniques for tweaking and for creating some secondary characters, all of the main characters are animated by a service bureau called The House of Moves (Venice, CA), which uses the Oxford Metrics (Oxford, England) Vicon optical motion-capture system.

Although motion capture can present certain problems for Buzz, in the long run using this technology actually frees up the animators to work meticulously on the secondary animation. Says Thorne, "That's what makes our show look really nice: the rendering, the shadows, the textures, the particles. Using motion capture gives us more time to work on the actual look of the show."

To help them get around some of motion capture's limitations—specifically, the difficulty of editing the data once it's been captured—Provost is working on a plug-in to Softimage that enables the animators to more easily tweak the captured data. "The production process being what it is, objects often get designed after the actual motion's captured," explains Provost. So if an actor must reach for an object, Buzz may have to use during the motion-capture session a representation of that object whose pro-



Animators at Calibre Digital Design use a combination of keyframe, motion capture, and Digital Image Design's Monkey to animate the four main characters in *The Adventures of Sinbad*. Shown here are the Rock Monster, which is 90% motion capture- and 10% keyframe-animated; and Admir, which is 40% motion capture- and 60% keyframe-animated.

keyframe-animated show." But also, she says, performance animation offers possibilities that would be difficult to obtain with pure keyframe animation: possibilities such as fluid, realistic movement. "Something like having the characters dance would be very difficult to do in keyframe animation—there would always be a stiff effect on it," she says.

On average 14 people are working on the modeling, rendering, and animation for each of the *Donkey Kong* episodes (there will be 26 episodes in all, each 22 minutes in length). To create the series, which is scheduled to begin airing in Canada next September, they're using Softimage and Alias/Wavefront's (Toronto) Explore software. For motion capture, they're using systems from Polhemus (Colchester, VT) and Ascension Technology (Burlington, VT), along with

Medialab's own proprietary Clovis software, which allows the animators to create standardized expressions for facial animations and makes it possible to capture simultaneously a person's facial expressions, body articulations, and hand movements as well as such automatic behaviors as blinking, winking, and breathing.

According to Tubiana, Medialab plans to stand by its approach for *Donkey Kong Country*. "There's nothing about performance animation or keyframe animation that restricts us from creating a good show," she says. "Where the performance animation technology won't allow us to do something, the keyframe animation will. We work with both and take advantage of the best of what each has to offer."

That statement is echoed by the

group at Calibre Digital Design (Toronto), producers of the 3D CG animation in the 22-episode TV show *The Adventures of Sinbad*. According to Neil Williamson, animation and digital effects director, this weekly one-hour show combines live action, practical effects, and both 2D and 3D digital effects. Once the team receives the final live-action footage, they usually have from three to six weeks to incorporate into the film the models, animations, and special effects they create.

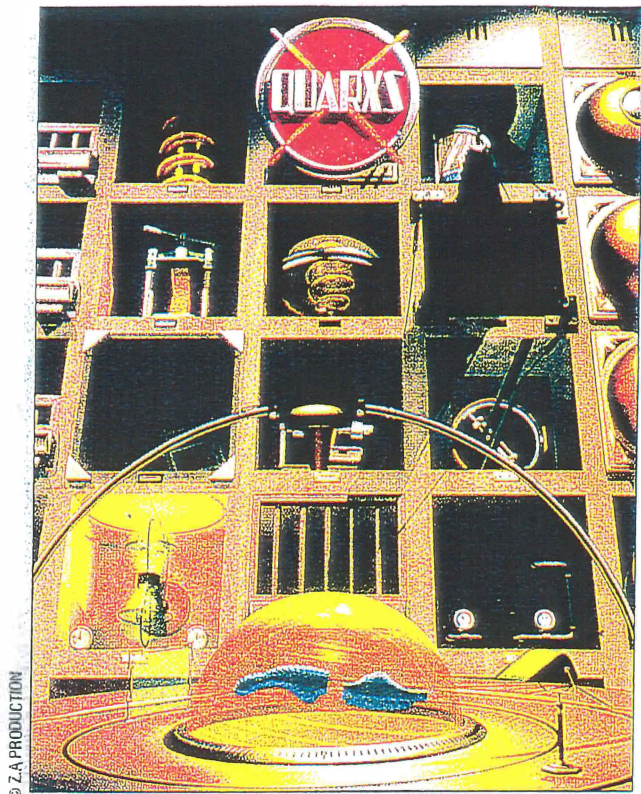
Wherever they can, says Williamson, they use the Monkey or the Polhemus motion-capture system to speed up the character animation process. This allows them to spend more time getting the characters to look real. "We model and animate in Alias and Softimage and use Alias StudioPaint for textures," he says. "With StudioPaint, we can get complex, and that really helps with the reality factor. We put a lot of work into the models to get them to look real."

Of the four main creatures in *The Adventures of Sinbad*, one is 90% motion capture and 10% keyframe, one is 40% motion capture and 60% keyframe, one is 100% keyframe, and one is 20% Monkey and 80% keyframe.

"We're using any real-time shortcuts that we can in order to take the onus off the animation time and still get the quality off it," says Williamson of the eight-person team of animators. "We simply don't have time on the set. We're not talking weeks for a shoot, we're talking days."

"My philosophy is that you never go one way or the other when it comes to animation techniques," Williamson continues. "You use whatever works for the particular creature you're animating."

It's the same sort of philosophy Z.A. Production (Paris) is using to produce *The Quarxs* and Fantôme Animation (Paris) is using to produce *Insektors*. Both shows originally began airing in France a few years ago; *The Quarxs*, created by Z.A. Production art director Maurice Benayoun, began as a 12-episode series of 3 minutes/episode. *Insektors*, created by Fantôme founders Georges LaCroix and



© Z.A PRODUCTION

When Z.A Production began work on *The Quarxs*, they used only the keyframe animation techniques in Softimage. But they recently developed a proprietary plug-in called *Persona*, which enables them to more easily animate characters using data captured by motion-capture systems, sound input, and various other types of input devices.

Renato, began as a 26-episode series of 13 minutes/episode. Now, each company is in the process of creating a new series based on their original shows, and each new series will consist of 13 episodes x 26 minutes. For each series, both Z.A Production and Fantôme plan to use mainly a mixture of keyframe and motion-capture technology.

"When we started on *The Quarxs* a few years ago, we animated the characters using only keyframe animation techniques in Softimage," says Benayoun. "We did this because the characters in *The Quarxs* are not anthropomorphic. They have no legs, no mouths, they are not humanlike. So it was very difficult to use traditional motion-capture techniques."

But since then, the company has developed *Persona*, a Softimage plug-in that enables them to more easily animate their characters using data captured by motion-capture systems, sound input, or various other types of input devices. Ac-

cording to Benayoun, they plan to use *Persona*, in conjunction with Motion Analysis motion-capture systems and other input devices, as well as keyframe and procedural animation to animate the characters in the new series.

"For example, one of the *Quarxs* moves with sound; his motion is the exact consequence of sound," explains Benayoun. "We will animate him with a sound-based input device. Another *Quarxs* is shaped like a torus and sort of animates into it-

self; for that one we will use procedural animation. Others can be animated more easily with keyframe techniques, especially if their shapes are difficult to create and animate. For us, it would be impossible to create each of these motions in any other way." According to Benayoun, production on the new series should begin sometime in 1997.

More immediately down the pike for Z.A Production is *Whatizzit*, a 3D series scheduled to air in France next spring as 52 three-minute episodes. To animate the characters in this series, the company plans to use a combination of keyframe animation and a variety of input devices, including sound, the mouse, and the keyboard.

Meanwhile, for the new series of *Insektors*, Fantôme expects that on average between 40% and 50% of the character animation will be done with motion capture, and the remaining will be done with keyframe, primarily using Softimage (modeling and rendering will be done with Alias/Wavefront's *Explore*). According to LaCroix, the decision to use one technique over the other will depend on the scene being animated.

"We'll use motion capture for simple animation—when there's only one character on the screen," he says. "For sophis-

ticated motion—say, for two characters fighting—we'll use keyframe animation."

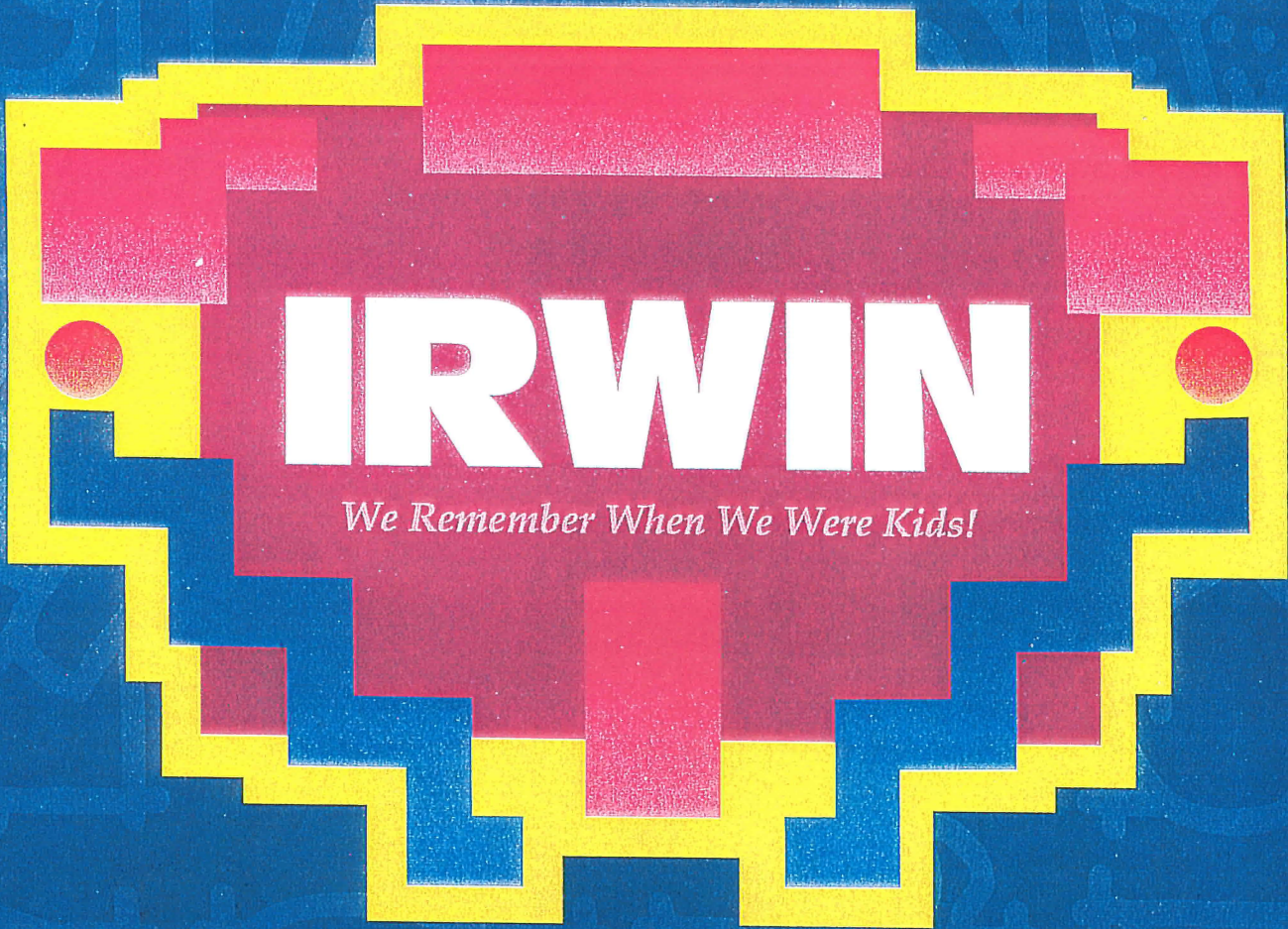
At press time, Fantôme was working on a 26-minute Christmas special based on *Insektors*, to be broadcast on Canal+, France's pay-TV network. According to LaCroix, a total of 17 CG people—three on modeling, six on rendering, and eight on animation—were in place to produce the show, in addition to three or four people for the motion-capture end of things. They plan to use *Explore* for modeling and rendering and Softimage for animation.

Judging by the TV shows covered on these pages, both keyframe and motion-capture technology bring to the table their share of benefits and limitations in terms of their use in animating characters for certain types of projects. And as production studios recognize what each technique has to offer, they're finding that what makes the most sense is to simply create a production process that works best for them.

For some, that decision may ultimately be made based on animator experience. "For a senior animator, it might be faster to keyframe," says Buzz's Paul Provost. "But if you're dealing with somebody who has only three years of experience, I don't think that's necessarily the case. And if you're dealing with extremely complex motion, it can be quite difficult to keyframe it."

For others, it may be based on the type of character being animated. "For what we're doing, and for the various odd shapes of some of the characters, you can't exactly get actors off the street who can play that kind of thing very well, I don't think," says Mainframe's Phil Mitchell. "You'd end up having to do an awful lot of animation on top of what you've motion-captured, and that kind of defeats the object of the exercise."

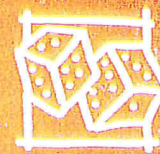
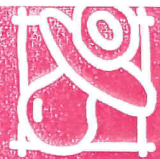
"The lesson in all this is that you use what's appropriate for the character and for your animators," concludes Calibre's Neil Williamson. "If you want to make characters that look and move realistically, then you've got to be willing to be flexible in your production process." ■

The logo is a stylized, jagged shape composed of red and yellow rectangular blocks. The word "IRWIN" is written in white, bold, sans-serif capital letters across the center of the red blocks.

IRWIN

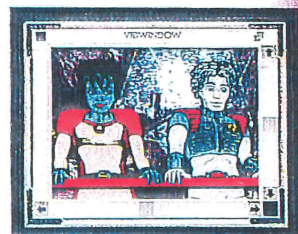
We Remember When We Were Kids!

Toy Book 1996



toon ART*

QUALITY ANIMATION CEL PAINTING SETS



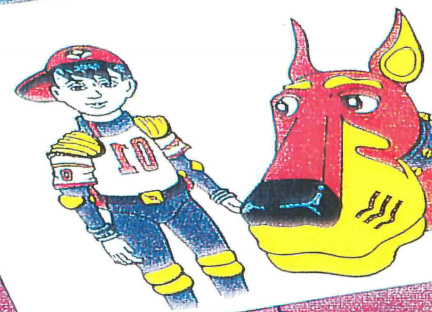
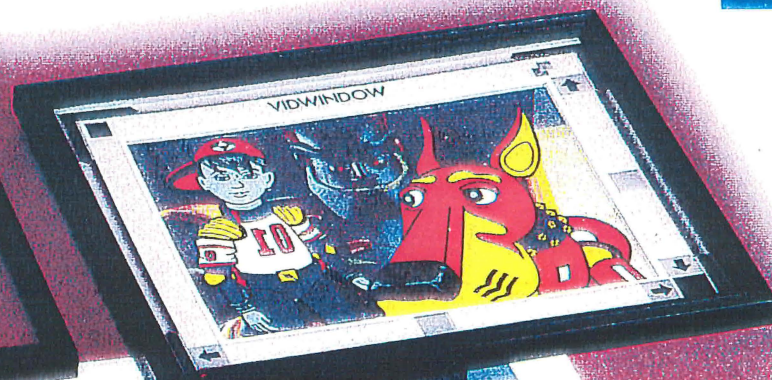
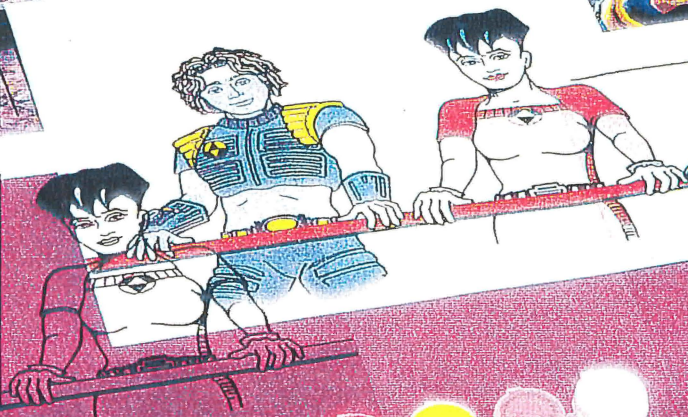
99307 - REBOOT



99304 - POLLY POCKET



99305 - ANNE OF GREEN GABLES



TOON ART PAINT KIT

Create two beautiful animation cels. Each cel is preprinted and laminated to a sturdy decorative matting. Paint the reversed side, add a background card and turn it over - the results are spectacular! Kit contains two 8 x 10 unpainted cels, 2 colour templates, 2 colour printed backgrounds, 2 deluxe picture frames, paints, brush, and instructions.

Ages: 6+ Pack: 12 Cube: 1.60 Weight: 15.0

99300 - ASSORTED

34

ReBoot™

31300

5½" REBOOT COLOR CHANGE

Hero figures that "ReBoot" (change outfits) by means of color change technology. Other figures are "infected" and use color change to "correct" their decoration. 7 Styles. Cold water (an energy bath) changes and warm water restores. Blister from package converts into an energy bath / color change chamber. Includes water funnel.

Ages: 4+ Pack: 12 Cube: 0.70 Weight: 14.0

BEFORE



AFTER



MEGABYTE'S THRONE ROOM

Includes 3 Reboot figures, null pile, disc shooter with collectible "Delete Disk" and hologramed game cube key.

HEXADECIMAL'S LAIR

Includes 3 Reboot figures, null pile, disc shooter with collectible "Delete Disk" and hologramed game cube key.

HACK & SLASH VEHICLE BAY

Includes 4 Reboot figures, ABC Vehicle with disc shooter, "Delete Disk" and hologramed game cube key.

30001

ACTION FIGURES

Each 5½" poseable figure includes a collectible "Delete Disk".

Ages: 4+ Pack: 12 Cube: 0.70 Weight: 5.0

30000

ASSORTED FIGURES

12 colorful 3" figures.

Ages: 4+ Pack: 24

Cube: 0.50 Weight: 3.0

30002

MICRO PLAYSETS

3 assorted playsets.

Ages: 4+ Pack: 12

Cube: 2.20 Weight: 10.5



Boys Action

53116
LARGE BACKPACK W/POCKET

Dynamic graphics of ReBoot characters. Top and front pocket with zippered closures. Padded shoulder straps.

Ages: 4+ Pack: 48
Cube: 2.10



53102
ROLL BAG

Vinyl tote bag with carry handles and shoulder strap. Top zippered closure.

Ages: 4+ Pack: 48 Cube: 2.30

53121
LARGE FLAT BACKPACK

Padded shoulder straps. Zippered top closure.

Ages: 4+ Pack: 48 Cube: 2.40



30066
5 1/2" FIGURE ASSORTED AND BINOME

Figures of the main characters decorated in a variety of ways as seen in game sequences - spring assortment and extensive fall additions. Includes articulated Binome figure, a citizen of Mainframe who plays an important, colourful, often humorous role in the show.

Ages: 4+ Pack: 12
Cube: 0.90 Weight: 5.0



30677
5 1/2" REBOOT FIGURE WITH CD ROM

Assortment of ReBoot figures with interactive CD ROM Disc. CD shows Mainframe City and is suitable for Mac or IBM compatible. (Caution: CD may not work with all hardware variations.) Also has an audio segment and can be played on CD players.

Ages: 4+ Pack: 12
Cube: 0.90 Weight: 5.0



30610
7" PLUSH FRISKET

Soft toy of one of the most popular characters from ReBoot.

Ages: 4+ Pack: 1
Cube: 0.10

30620
13" PLUSH FRISKET

Ages: 4+ Pack: 6 Cube: 3.00
Weight: 10.0



35

Boys Action

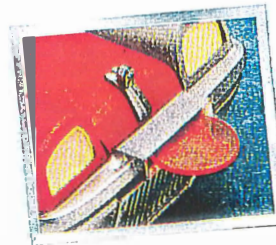
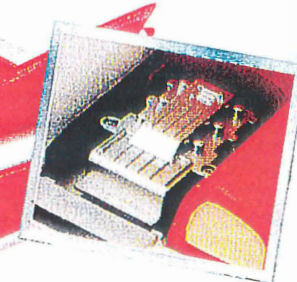
30077 MICRO VEHICLES

Collectible series of the many vehicles featured on ReBoot. 6 styles.
Ages: 4+ Pack: 1



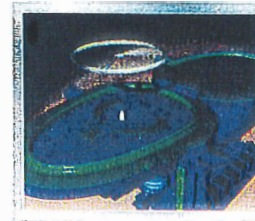
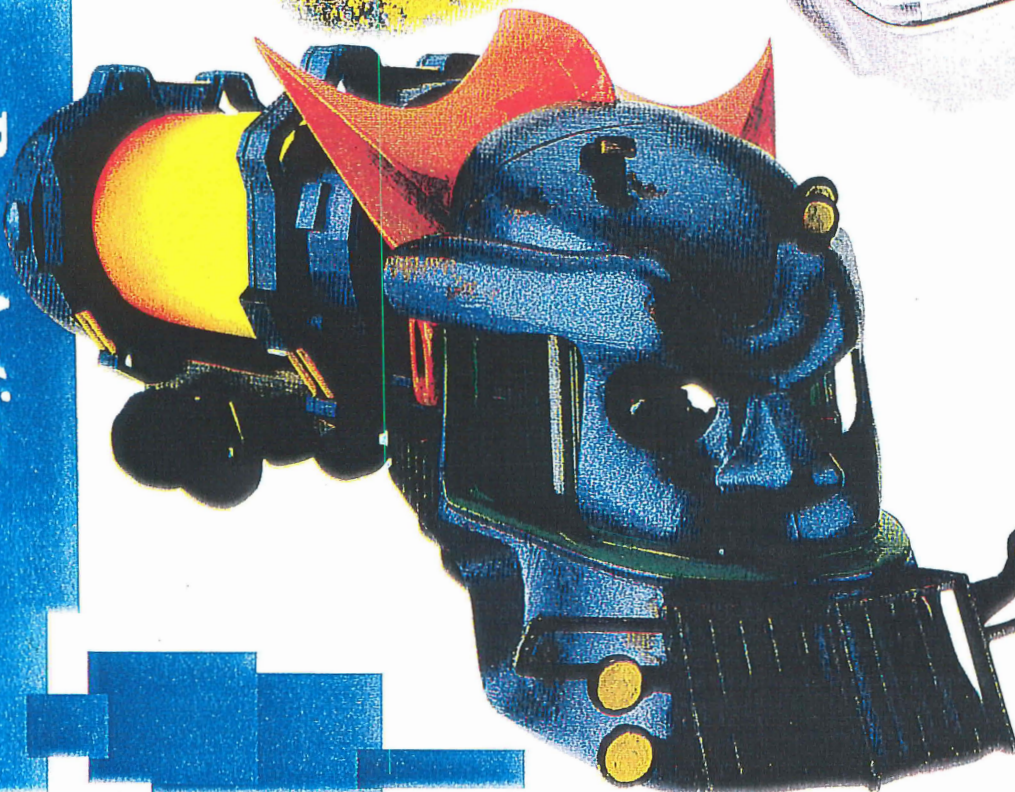
30004 BOB'S V262 TURBO DROPHEAD CAR

Bob's car has a vid window in the trunk. Front hood opens to reveal a rocking motion engine. Seats 2 figures. A shooter is attached to the front of the car that fires a collectible "Delete Disk". Requires 2 "AA" batteries, not included.
Ages: 4+ Pack: 6 Cube: 2.20
Weight: 12.0



31341 MEGATRUCK MICRO PLAYSET

Semi-Megatruck and trailer with wheels. Cab opens up to reveal a Micro-playset. Includes 6 Micro Figures. Separates into 3 parts: Escape Vehicle, Main Section and Flying Vehicle. Includes, ejector seat, hidden traps, missile launcher, trailer, helipad and helicopter.
Ages: 4+ Pack: 4 Cube: 2.60 Weight: 14.0



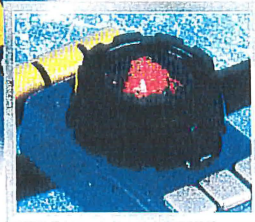


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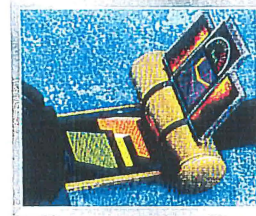
30700 - GLITCH

Five hidden toys in one. Mender, communicator, telescope, energy level monitor and disc shooter. Bob uses Glitch to help him get out of all kinds of scrapes. Glitch combines the idea of a swiss army knife with hidden tools. Glitch looks like a large box that straps onto your wrist until you begin pulling out 5 hidden tools with working parts, lights and electronic sounds.

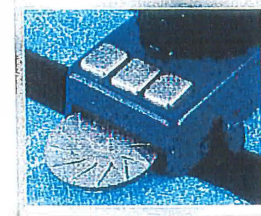
Ages: 4+ Pack: 12 Weight: 8.5



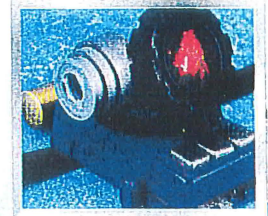
MENDER



COMMUNICATOR

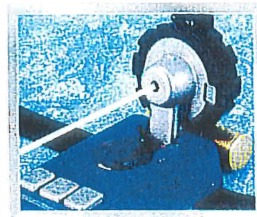


DISC SHOOTER



TELESCOPE

**LIGHTS AND
ELECTRONIC
SOUNDS**



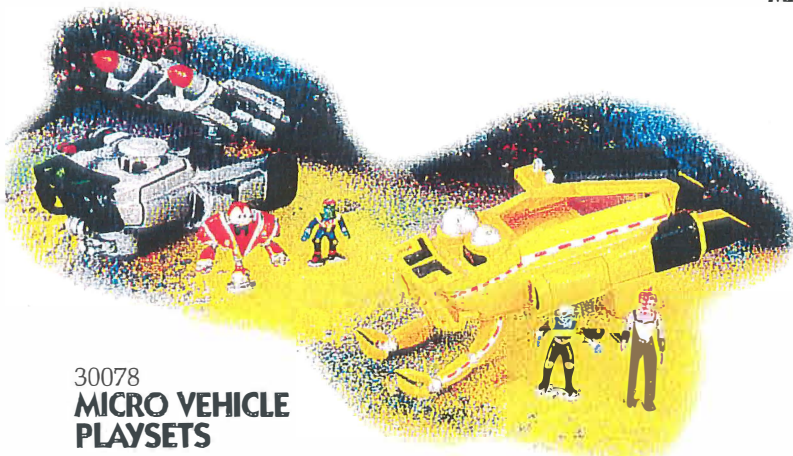
ENERGY LEVEL
MONITOR



Boys Action

31330 EXO-SKELETON

Fully articulated Exo-Suit from the arsenal of the principals office. Moveable legs, arms and tail. Fits all good guy 5 1/2" figures. Looks like a combination of dinosaur and robot. Ages: 4+ Pack: 6 Cube: 2.70



30078 MICRO VEHICLE PLAYSETS

Two assorted vehicles each with two Micro Figures. Each vehicle opens up to contain both figures. Undersea vehicle has pincer action. ABC vehicle fires 2 missiles. Ages: 4+ Pack: 12 Cube: 0.80 Weight: 5.0



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CANADA

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TUITION FEES: Borrowing to Learn

CANADA'S

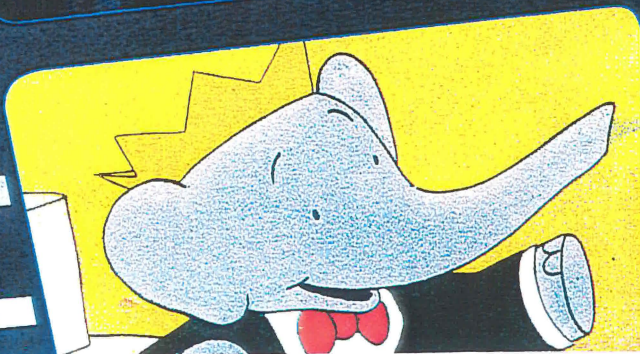
WEEKLY NEWSMAGAZINE

Maclean's

JUNE 24, 1996

CANADIAN MADE

A new breed of
wizards makes it
big in the
magical
world of
animation



\$3.50



BY CHRIS WOOD

In his blue smoking jacket, white sneakers and sandy-grey mutchop whiskers, Clive Smith bears an eerie resemblance to one of his company's own creations. Settled in an oversized green armchair to discuss the international popularity of Canadian-made cartoons, he has the air of a portly Beetle-juice, the manic-demonic star of one of the many animated series that Nelvana Ltd. has brought to life in Toronto since Smith founded the studio with Michael Hirsh and Patrick Loubert in 1971. Then, he reminisces, "there was no animation industry" in Canada. Now, as the company hits 25, kids are watching Canadian-made cartoons in living-rooms from Boston to Beijing. Much of Smith's impressively vast office is taken up with the trophies of Nelvana's success: stuffed Babar elephants, Rupert the bear artwork, souvenirs of series that now air with other Nelvana productions in more than 140 countries. "Our market," Smith gloats, "is the world."

Nelvana is not alone. Montreal's CINAR Films Inc., with *The Little Lulu Show* and 29 other series in its library, sells its productions in more than 100 countries. *ReBoot*, the first animated series for television created entirely with computer graphics,

Canada's artists bring new life to animation

CANADIAN has been sold in 47 countries by its Vancouver originators. Dozens of other studios are also contributing to the \$150-million-a-year roster of animated production in Canada, turning out a steady stream of series, television specials and quirkier fare for international markets.

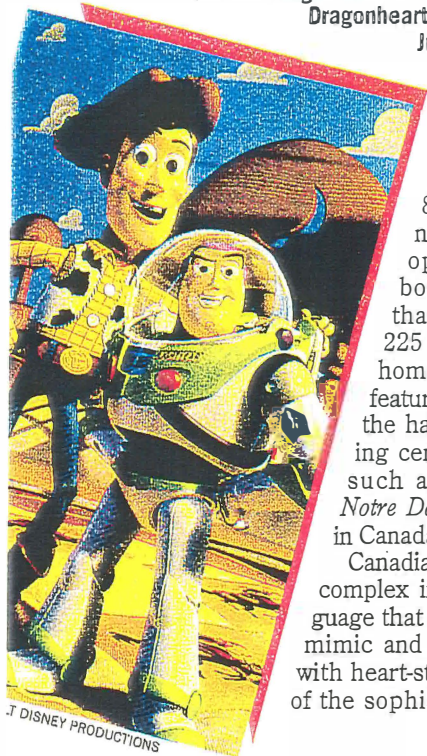
More than that, Canada is home to the high wizards of the next wave of animation magic, the computer artists who fabricate fantasy from nothing more substantial than the electronic plasma that flickers through a microchip. Using innovative software from creators such as Toronto's Alias|Wavefront, computer animators like Steve (Spaz) Williams have dazzled and delighted audiences in movies including last year's hyper-realistic *Jumanji* and 1994's *The Mask*, which earned Williams an Oscar nomination (page 42).

Whether their tool is a pencil or a mouse, Canadian animators are riding an explosion in demand for their talent. That is thanks in large measure to a reputation first established by animation pioneers working for the National Film Board (page 40). Now, studios in Hollywood, London and Paris stand in line for the most talented graduates from the best-known of several Canadian animation training centres, Sheridan College in Oakville, Ont., just west of Toronto (page 43). "Sheridan," says Hirsh, now Nelvana's chairman, "is the Harvard of animation schools—on a worldwide basis."

Competition among the country's 75 indigenous studios for Sheridan and other anima-



Canadian animators or computer software created *The Lion King's* meerkat, *Timon*, and *Toy Story's* Woody (insets); as well as (descending order on strip) *The Mask's* bizarre effects; *Dragonheart's* dragon; *Hunchback's* Clopin; *Jurassic Park's* T. rex: explosion



tion graduates rose sharply with the arrival in Canada this spring of the industry's 800-lb. gorilla. The Walt Disney Co., got in with both feet, opening studios in April in both Vancouver and Toronto that by year's end will employ 225 animators making direct-to-home video sequels to Disney feature hits. Other Canadians dot the halls in Burbank, Calif., creating central characters on features such as Disney's *Hunchback of Notre Dame*, which opens this week in Canada.

Canadians lead as well in writing the complex incantations of program language that allow computer modelers to mimic and modify real-world images with heart-stopping fidelity. Most of the sophisticated

MADE



software used to give shape, texture and motion to figures such as the liquid-metal robot of *Terminator 2: Judgment Day*, and to place Tom Hanks on the same platform as John F. Kennedy in *Forrest Gump*, comes from companies based in Toronto and Montreal.

Bill Reeves, the genial mathematician who oversaw production of Disney's *Toy Story*—the first fully digital animated feature—at Pixar Animation Studios, north of San Francisco, grew up on a farm outside Toronto.

The breathtakingly convincing dragon (with the voice of Sean Connery) that may be the best thing about this summer's *Dragonheart* is the work of a team of animators at California's Industrial Light & Magic that was led by North York, Ont., native James Strauss.

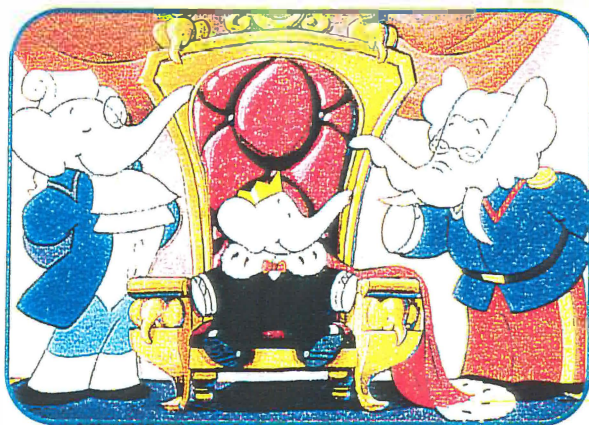
Practitioners at the leading edge of the new digital alchemy display a distinctly un-Canadian hubris. "We are changing the way Hollywood makes pictures," declares Bob Munroe, president of Toronto's C.O.R.E. Digital Pictures, a computer special-effects company that grew out of a team assembled in 1993 to work on William Shatner's television series *TekWar*. At Toronto-based Alias|Wavefront, whose software was used to create animated special effects in eight of last year's 10 top-grossing Hollywood movies, ambitions are grander still. "Over the next five years," says president Robert Burgess, "the race is on

to create synthetic human beings that are indistinguishable from real ones." Alias already has engineers working to bring a digital Adam to life in its 1950s-futurist-style quarters in a former chocolate factory.

Across town, Nelvana's home is in another former factory—in this case an ex-munitions plant. There is nothing warlike about what it produces now. Nelvana (the company takes its name from a 1940s-era Canadian comics superhero) has built its \$50-million-a-year business largely on what Hirsh describes as a "kinder, gentler cartoon." In fact, with series such as the mid-1980s *Care Bears*, Nelvana took gentle to marshmallowy extremes. Action series including *WildC.A.T.s* and the mock-creepy *Tales from the Cryptkeeper* have helped restore the balance, as has the studio's instructional *The Magic School Bus*—the first animated series to air regularly on PBS in the United States.

But with some exceptions, and despite whatever else they usually lack in the way of identifiably Canadian references, industry leaders acknowledge that Canadian-made cartoons are less overtly confrontational than American ones. In its downtown Montreal studios overlooking the St. Lawrence River, CINAR also concentrates on nonviolent shows, says co-founder and chairman Micheline Charest. Among them: *Madeline*, the animated version of the classic children's stories about a Parisian schoolgirl, and *The Busy World of Richard Scarry*, which airs on Nickelodeon in the United States and the Family Channel in Canada. Another leading studio, Ottawa's Lacewood Productions Inc., has followed a similar path with such productions as two animated TV specials based on Lynn Johnston's hugely popular syndicated comic-strip, *For Better or for Worse*.

There have been exceptions to the prevailing niceness. In Vancouver, a handful of small studios have made names for themselves by working the fringes of animated respectability, and sometimes by pushing its gross-o-meter to the limit. Cartoonist Gary Larson sought out the city's International Rocketship Productions to make animated specials based on his *Far Side* strips largely on the reputation of founder Marv Newland. He created the cult classic *Bambi Meets Godzilla*—the definitive 90-second statement about naïveté and fate. Another small West Coast outfit called a.k.a. Cartoons inc. signed a co-production agreement in April with German partners for a series based on a self-mutilating butcher character named Lupo. The last series from a.k.a. Cartoons, 1995's *The Brothers Grunt*, was so repulsive that MTV, the U.S. music network where the scatological *Beavis and Butt-Head* found a happy home, discontinued it.



Nelvana's Babar: in 1971, 'there was no animation industry'

But what the country's leading commercial studios have learned is that niceness sells—and sells and sells. In a worldwide marketplace of multiplying television channels, says CINAR's Charest, animation—which is easily dubbed—"is not limited by cultural boundaries." That has been critical to CINAR, Nelvana and Vancouver's BLT Productions Inc., producers of *ReBoot*, in the search for financing for their projects. Notes

CINAR president Ronald Weinberg: "We have never done a production that was intended for one market only." Adds BLT president—and *ReBoot* producer—Christopher Brough: "Canadian animation may be accepted around the world because it's far less intrusive. I don't think you're going to get a lot of people buying *GI Joe*."

What Canada's leading cartoon factories have also discovered is a secret that Disney learned long ago: animated productions



PETER BREGGIN/MACLEAN'S

"Most Canadians," he says, "have worked in about three countries."

Like Surrey—who drew *The Lion King's* meercat character, Timon, and oversaw animation of a central character named Clopin for *Hunchback*—many are alumni of the highly respected Sheridan program. Demand for graduates is so strong among U.S. and international studios, in fact, that many students receive offers of jobs with starting salaries of \$40,000 to \$50,000, plus signing bonuses, as much as a year before they receive their diploma. Top animators with experience—especially in the exploding field of computer animation—can command up to 10 times as much. Says Strauss, another Sheridan alumnus: "It's crazy out there."

COVER

tend not to show their age as quickly as live-action shows, extending the syndication value of archived material almost indefinitely. As Charest puts it, animation "has a long shelf life."

That is evident at Disney's sprawling production campus in Burbank. Images from the entertainment giant's 73-year history proliferate, from the Mickey Mouse topiary along Dokey Drive to the seven gargantuan concrete dwarves that support the facade of the Disney executive offices. A huge blue cone—modelled on Mickey's hat in "The Sorcerer's Apprentice" from the 1940 classic *Fantasia*—identifies the entrance to Disney's feature animation studio. The elephantine scale ends at the building's door. Inside, most of the 800 people turning out Disney's trademark animated theatrical features settle for cramped spaces like the one occupied by Mike Surrey. A senior animator on both 1994's *The Lion King* and this year's *Hunchback*, Surrey, who joined Disney six years ago after stints with studios in Long Island, N.Y., and London, is typical of Canadian artists who have discovered the sellers' market for their skills.

Nelvana's Smith (left); scene from Pippi Longstocking: 'a strong female character'



Still, many Canadians laboring in Walt's magic shop insist that they would happily turn their back on Southern California's beaches, palm trees and social decay. "If you gave them the chance to go back and do what they do here," says Surrey, "half would go back in a heartbeat. I'd get my parka and my snowboots and, boom, I'd be gone."

That option may become reality for a growing number of expa-

A TRADITION OF INNOVATION

Whether it is the searing drama of a child-abuse scandal (*The Boys of St. Vincent*), a controversial documentary about the 1990 Oka uprising (*Kanehsatake: 270 Years of Resistance*) or some animated whimsy about evolution (*How Dinosaurs Learned to Fly*, a short currently screening in Famous Players theatres across Canada), the National Film Board has always been distinguished by eclecticism. Established in 1939 to make wartime propaganda films, the NFB soon branched out into animation. It hired the Scottish genius Norman McLaren in 1941—for \$40 a week and a bed at the YMCA, as legend has

it—to create an animation program that would eventually make the Montreal-based institution known around the world for technical and artistic innovation. Five of the NFB's 10 Oscars have been for animated films, including *Neighbours* (1952), *The Sand Castle* (1978), and *Bob's Birthday* (1995). Others, such as *The Big Snit*, *The Cat Came Back* and *The Sweater*, have become classics.

But now, the entire board is under siege. Criticized for its level of spending on administration and distribution, it is now downsizing and reorganizing to deal with a 32-percent cut of its parliamentary allocation over three years. That will leave it with \$55 mil-

lion a year by the spring of 1998. The English- and French-language animation studios already operate on shoestring production budgets—\$1.7 and \$1.5 million, respectively, in 1995-1996. "When public purse strings are so tight, it's harder to justify something which has its real interest in art, even if it's socially responsible art," says Barrie Angus McLean, head of the English animation studio. "But you have to keep making the case. I believe some NFB films have even helped people stay out of prisons or hospitals by showing them alternatives." He cites *Sniffing Bear*, a 1992 short from the French animation studio about gasoline sniffing in the North that was made in consultation with aboriginal prisoners in a northern Quebec jail.

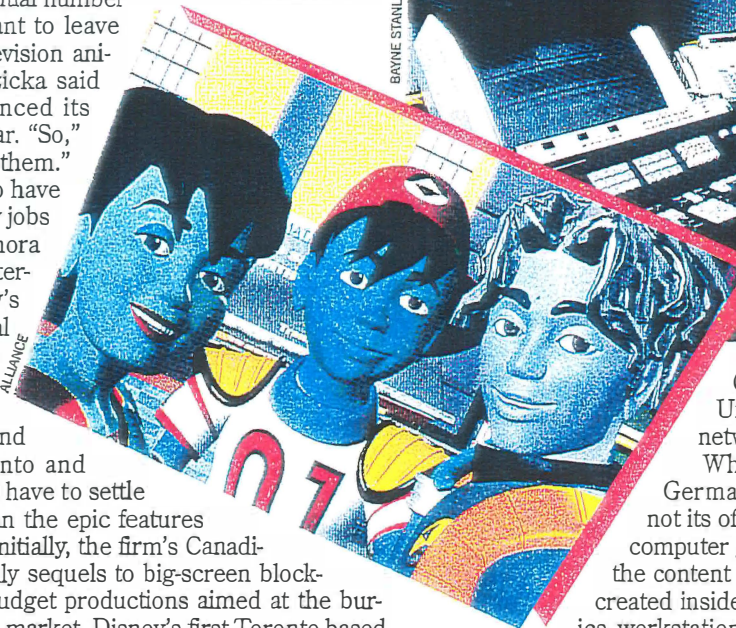
Currently, 46 animated films are at various stages of production at the Eng-



triate Canadian animators with Disney's decision to establish new production studios in Toronto and Vancouver. In part, the Burbank company's move reflects its growing dependence on Canada as a source of production talent. "A substantial number of creative people don't want to leave Canada," senior Disney television animation executive Tom Ruzicka said when the company announced its Canadian plans late last year. "So," he added, "we're coming to them." Among the 9,000 people who have since applied for the 225 new jobs in the studios, confirms Lenora Hume, the University of Waterloo graduate who is Disney's vice-president of international animation production, are "lots of Canadians who want to go back."

The lucky few who do land jobs in Disney's new Toronto and Vancouver branch plants will have to settle for less glamorous work than the epic features that occupy Surrey. At least initially, the firm's Canadian studios will produce mainly sequels to big-screen blockbusters, comparatively low-budget productions aimed at the burgeoning direct-to-home video market. Disney's first Toronto-based Canadian project director, Andrew Knight, was back in Burbank

BLT's Brough;
ReBoot (below): a
computer-generated
cartoon now seen in
47 countries



Canada's City TV, Showtime in the United States and Britain's B Sky B network next year.

What sets the \$12-million Canadian-German co-production apart, however, is not its offbeat premise but its intense use of computer graphics. As much as 75 per cent of the content of every shot for the show is being created inside C.O.R.E. Digital's banks of graphics workstations at locations in Halifax, Toronto and Berlin. That compares with about 20 per cent of

'Changing the way Hollywood makes pictures'

last week to get senior management's blessing on creative plans for his unit's first assignment, *Christmas Belle*, a seasonal sequel to 1991's *Beauty and the Beast*.

It is a long way from sunny Southern California to fog-shrouded Halifax. But another kind of animation history was made earlier this year on the Nova Scotia capital's industrial waterfront. A cavernous grey building had been transformed into a soundstage for filming what its producers at local Salter Street Films Ltd. say is the most ambitious hybrid of live-action and computer-generated animation ever attempted for television. *LEXX: The Dark Zone Stories* is a satiric cross between *Star Trek* and *Aliens* in which three mismatched adventurers travel through space in a Manhattan-sized, genetically modified moth shaped suspiciously like a set of male genitals. The first of four two-hour episodes will air on

Apollo 13's action, and less than 10 per cent of the visuals in the effects-heavy series *Star Trek: Deep Space Nine*.

The production would not have been possible without the stunning new capabilities of computer-driven animation. Wielding powerful graphics software, the designers can now digitally model and animate virtually any image they can dream up, and then merge the results on-screen with conventional photography. The results can be dramatic—*Dragonheart*'s talking dragon—or seamlessly invisible, as in Gary Sinise's "missing" lower legs in *Forrest Gump*. What most of the dazzling new effects share is roots in commercial software written by Canadian companies like Alias, Montreal's Softimage Inc. and Discreet Logic Inc., or Vancouver's Vertigo Technology Inc. Boasts Alias's Burgess: "There are no significant players in computer graphics that are not Canadian-based."

Their achievements have made several Canadian software innovators hot takeover targets. In early 1994, Seattle software giant

The NFB's Bob's Birthday (top);
The Sweater and The Big
Snit: classics from an
institution under siege

lish and French studios. Fourteen new English-language shorts are scheduled for a new Bravo! series, called *Short Animated Canadian*, beginning in late August—evidence that the growth of specialty channels has provided much-needed exposure.

Thirty animators—10 full-time staffers and 20 contract employees—work in the English animation studio. Their projects range from an unexpectedly amusing lesson on the dangers of lead poisoning in the home, to a monster suffering from a bad case of shyness. And the film-makers use a variety of media:

drawing and painting, wax crayon on glass, puppets, fabric and Plasticine. Most use specialized computer software at some stage of production, and a few use totally computer-generated images. The board introduced the first computer-controlled and operated animation system in 1968.

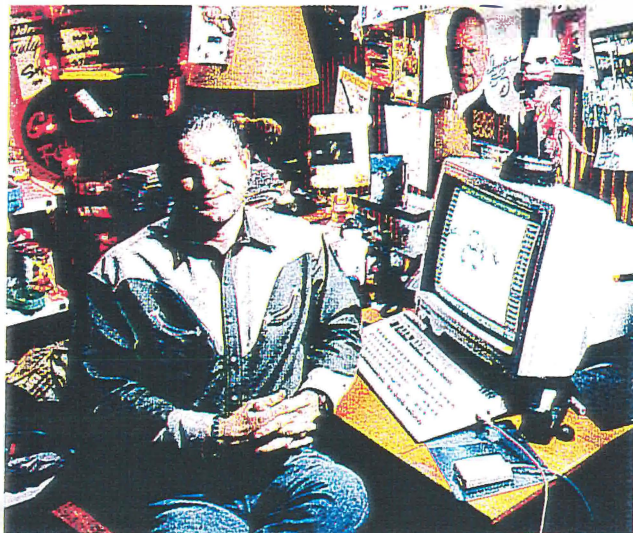
With the closure of similar organizations in other countries, the board has become a haven for non-commercial animators. One of them is Shui-bo Wang, a 35-year-old former instructor at Beijing's Academy of Fine Arts and onetime Red Guard. Accomplished in traditional Chinese silk painting, heroic social realism and European drawing, Wang is incorporating all three modes into an animated, semiautobiographical narrative of recent Chinese history. "I use the small details," says Wang, "to tell a larger story." And that, in a nutshell, is what keeps the NFB's animation visionaries occupied.

DIANE TURBIDE

Microsoft Corp. paid \$176 million to acquire Softimage. A year later, Silicon Graphics Inc., which builds workstations for computer animation, spent \$440 million to buy Alias.

As dramatically as the new Canadian software technology is changing what audiences see, it is also tilting the economics of movie and TV production in favor of smaller producers. "Something of this magnitude," says C.O.R.E.'s Munroe of *LEXX*, "you couldn't have done in Halifax two years ago. You couldn't have done it anywhere in the world five years ago." Now, with the price of a low-end computer-graphics workstation and associated software about that of a new Mercedes-Benz sedan, Munroe notes, "you don't have to be in Hollywood and you don't have to have hundreds of millions. The technology will be very liberating."

Or not. "It is quite terrifying," superstar Tom Cruise told a symposium on actors' rights two years ago. What alarmed Cruise is the same goal that has inspired Burgess: the replication of human actors in the same computers that now spit out convincing reptiles and sunsets. The feat is not yet possible. Only recently have programmers succeeded in creating lifelike hair. Fully realistic human skin, and even naturalistic fabric, remain elusive. But Alias has committed more than 100 software engineers to an ambitious attempt, called Project Maya, to breathe life into the first cyberhuman. Further into the future, Burgess promises that computer animators will be able to "cast" long-dead stars in new work.



Creating the special effects for the 1994 Jim Carrey megahit *The Mask*, says Canadian Steve (Spaz) Williams, was "like being able to draw in your textbook in math class. It was a field day to make bloody eyeballs and get paid for it—like the teacher being absent every day." Williams, 34, has had many such field days since he began working for George (Star Wars) Lucas's renowned Industrial Light & Magic in 1988. The only animator on staff when he joined the San Rafael, Calif., company, Williams is now the visual effects supervisor in a 500-employee department. His credits include the T1000 "cyborg" in *Terminator 2*, the T-rex in *Jurassic Park* and, of course, the fluid face in *The Mask*, for which he earned an Oscar nomination.

His workspace at ILM is a windowless, basement-level studio the size of a family recreation room. Nicknamed "The Pit," it is adorned with a large Canadian flag, a hockey stick and Maple Leafs pennant, and a poster of Don Cherry that glares down at Williams while he works.

Born in Toronto, Williams studied animation at nearby Sheridan College. He went on to work at Toronto's groundbreaking Alias before being lured to ILM. Williams, who has a seven-month-old daughter, recently oversaw the comput-

Williams: special-effects magic from a California basement

Computer engineers strive to replicate a human actor

"Somewhere," says Alias's president, "there is a movie that some director is thinking about that Humphrey Bogart should play in. And he will be able to." But not everyone is enthused about the so-called synthespians. "Bogart's brain is dead," observes Pixar's Reeves. "And Bogart's brain is what was acting."

The visual metaphor that may best capture the state of Canada's animation industry can be found in Vancouver. There, three floors above a shuttered former National Film Board office—closed last year in the wake of federal cutbacks—is where 60 animators spin weekly episodes of *ReBoot* out of banks of high-powered computers. Set in a community called Mainframe within an imaginary computer, *ReBoot*'s sizzling graphic effects and wry references to the rest of pop culture made it an instant hit when it first aired on ABC in 1994. Although ABC decided to drop the show (effective late this year), after Disney acquired the U.S. network in late 1995, international sales ensure its continuing production. And with more than 200 hours of animation already in the can, *ReBoot* producer Brough claims to have created "more computer-generated images than all of the computer companies in the world."

Whether or not that boast is true, Brough's BLT Productions and its Toronto distribution partner, Alliance Communications Corp., have unquestionably taken animation to a new level of artistic—and commercial—complexity. With audiences apparently eager for more computer-generated adventure, the two partners last month announced the release of a second series, *Beast Wars*, based on characters that transform from animal shape into powerful robots. Merchandise based on characters from both series is also in the works—aided by the fact that BLT's computer-generated characters can be replicated in plastic by computer-controlled manufacturing equipment with astonishing ease.

Back in Toronto, Nelvana's founders insist that computer anima-

er special effects for the Arnold Schwarzenegger movie *Eraser*, opening across Canada this week.

Williams believes that computer-generated actors are "inevitable. We have digital stunt doubles now. The guy who bought it with the toilet seat in *Jurassic Park* didn't exist." But he says he will not work on virtual actors. "It's a weapon. You could have the U.S. president giving a speech—who had been dead for five years. You think about moral implications later—usually too late."

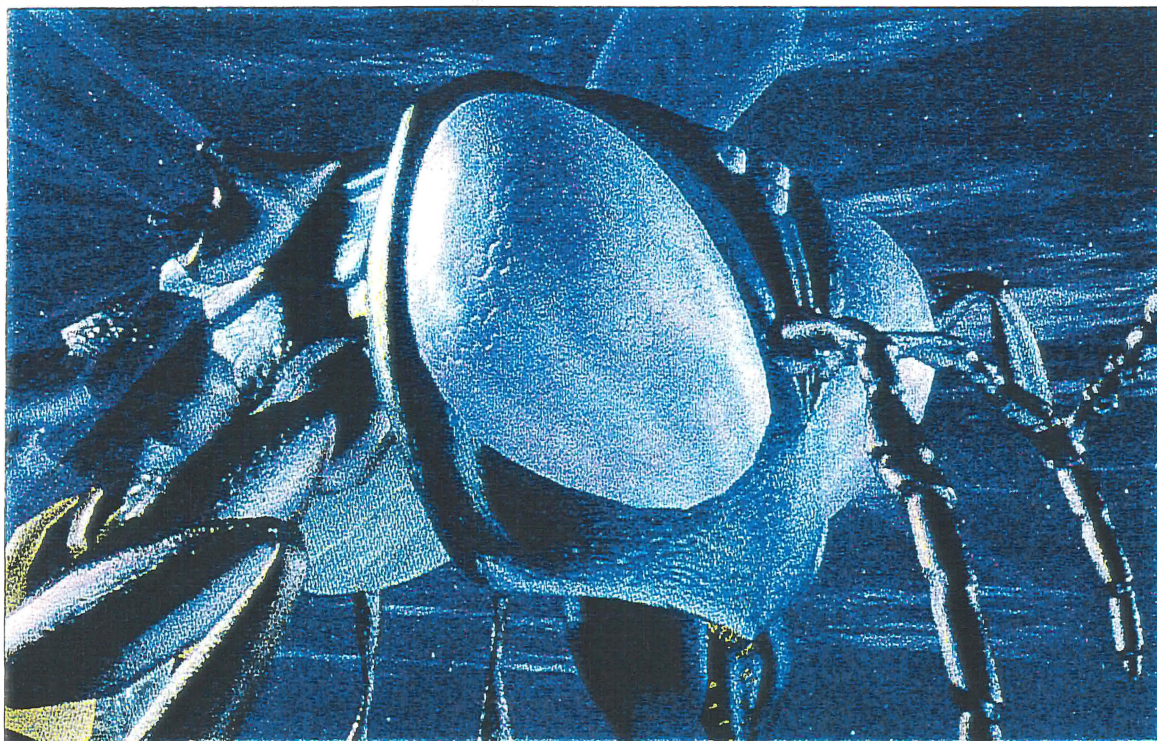
CHRIS WOOD in San Rafael

tion poses no threat to the more traditional forms that have carried Canadian studios to their present prominence over the past 25 years. "They don't cancel each other out," notes Hirsh. Indeed, Nelvana is well into the creation of a new animated feature—its sixth—using conventional techniques. *Pippi Longstocking*, a co-production with Swedish and German partners based on Swedish author Astrid Lindgren's spunky character of the same name, is slated for release next year. Pippi, explains Nelvana's Smith, "is a tremendous character for today. She's a strong female character—which we are short of in this business."

It is about the only shortage that Canadian animators are likely to admit to. But it points up an enduring—and somehow comforting—truth amid the dazzling new developments in animation technique. Novel computer-generated "whizbangs" may grab momentary attention, admits Brough, "but the timeless glue is the strength of a story." Happily for Canadian cartoon creators of every stripe, the stories they are telling continue to capture hearts and imaginations around the world.

With DIANE TURBIDE in Montreal

SPOTLIGHT



CREEPY CREATURES: Toronto's Alliance and Vancouver's Mainframe Entertainment, the team behind "ReBoot," have created the computer-animated "Beast Wars," which premiered in syndication in the U.S. in April.

INDIES PICKING UP PACE

Prowess with co-productions drives expanded private sector

By BRENDAN KELLY

MONTREAL Canada has a long history of animation production, largely thanks to the groundbreaking work of the government-funded National Film Board of Canada. But only in the past decade has the private, commercial animation industry really taken off in this country.

CANADA

Canada's indie animation producers are busier than ever these days, and one of the main reasons for the boost in activity is the Canuck knack for partnering with production and broadcast entities abroad.

Canadian animation outfits routinely construct complicated treaty co-productions with European partners, and in recent years have increasingly helped finance toon projects by selling distrib rights for shows to nets and cable outlets in the U.S.

Lacewood Prods. of Ottawa is in the midst of its busiest year ever, with a slate of projects that reflects the industry's mix of Euro co-productions and U.S.-targeted fare. Its series "Katie & Orbie" had its U.S. premiere on PBS in February, and currently airs on 140 PBS stations across the U.S. On the European front, Lacewood re-

cently finished 26 episodes of "Flash Gordon," a Canadian-French co-production that will make its bow on YTV in Canada in the fall and will be taken out in syndication in the U.S. at the

Montreal-based Cinar Films, one of the top animation producers and distributors in Canada, recently upped its production of live-action programming, but that hasn't slowed its animation

'Business is great in Canada. All the animation companies are riding the crest of the good times.'

I think we have a critical mass of companies in Canada.'

Lacewood Prods. president Sheldon Wiseman

same time.

Lacewood is in pre-production on "Legends of the Land," three specials based on native Indian legends, which are being produced for broadcaster Canadian Broadcasting Corp. and the Disney Channel.

'Strategic relationships'

"I think our reputation has allowed us to expand strategic relationships around the world with people who want high-end animation," Lacewood president Sheldon Wiseman says. "Business is great in Canada. All the animation companies are riding the crest of the good times. I think we have a critical mass of companies in Canada."

activity. Current animated series on the slate include "The City Mouse and the Country Mouse," a co-production with France Animation and Ravensburger in Germany; "The Little Lulu Show," which airs on HBO in the U.S.; and "Arthur," which will play daily on PBS starting in October.

"What's been really fun is to watch the animation grow next to the new ramping up of our live-action production," Cinar president Ron Weinberg says. "We are not that keen on getting away from what we do well — we have a very good understanding of how to adapt books and we continue to focus our attention on that, and we like

the classics. The idea of doing far-out animation and changing the style in a completely different direction is not something we're contemplating."

Toronto-based Alliance Communications segued into the animation biz a couple of years ago with the computer-animated series "ReBoot," and even though the series has been dropped by ABC after two seasons, the Toronto-based company plans to use international sales to help finance a third season.

Alliance and Vancouver-based producers Christopher Brough and Ian Pearson, the team behind "ReBoot," are producing "Beast Wars," which premiered in syndication in the U.S. in April. It will begin airing weekly starting in September. Both series are produced in Vancouver at the Mainframe studio, a state-of-the-art computer-animation facility.

"We're pretty bullish on the prospects with Mainframe, the world's leader in production of 3-D animation for television," says Steven DeNure, president of Alliance Multimedia. "With shows like 'ReBoot' and 'Beast Wars,' they look different in a crowded marketplace, and they attract the attention of buyers around the world."

"ReBoot" and "Beast Wars" are part of a booming animation

Turn to page 112

Disney finds talent up north

By BRENDAN KELLY

MONTREAL Walt Disney Animation Canada, the industry giant's new studio located north of the U.S. border, is one of three wholly owned Disney animation studios around the globe.

What makes the company's Canadian operation unique, however, is the fact that it will utilize more local animation talent than is the case at the Disney studios in Sydney and Tokyo. Given Canada's proximity to the U.S., especially its shared TV and movie culture, Disney execs feel it is easier to work with Canadian directors and creative personnel than in territories farther removed from the U.S. entertainment nerve center.

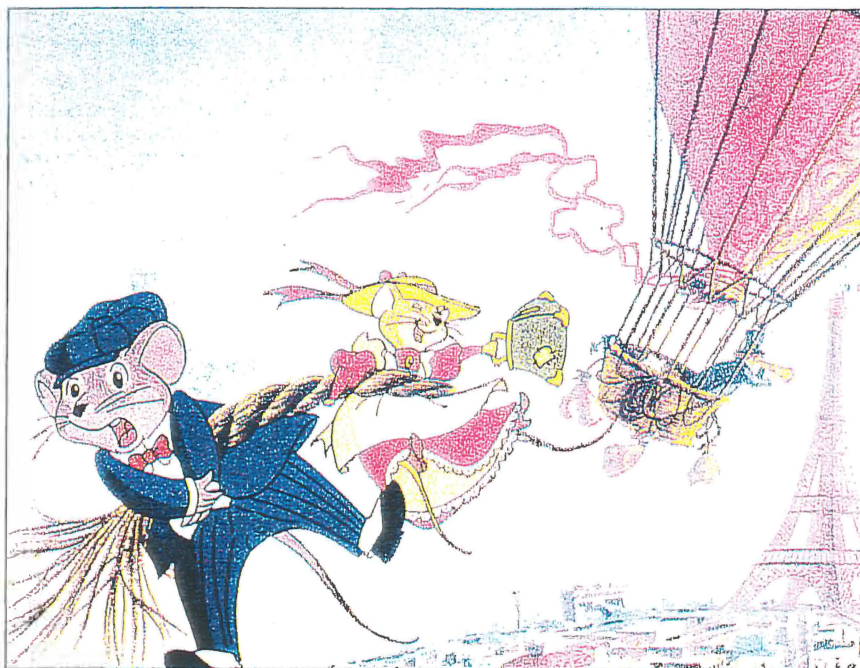
As a result, virtually everyone working on projects at the Canadian studio is from the country's large pool of animation talent. The studio opened in March with a main facility in Toronto and a satellite in Vancouver. Disney is in the final stages of hiring animators for the studio.

"It's a bit different, in that we're doing the creative in Canada," says Lenora Hume, VP of international production for Walt Disney Television Animation. "With the Australian and Japanese studios, we've been using American directors based in Los Angeles, and those studios have been functioning as production studios. There is this remote situation where the director is not living and working in the country where the project is being produced. In Canada, we're using Canadian directing talent, Canadian designers. So the whole creative team is there. It's an expansion of what we've done in the past."

Scripts will continue to be developed in Los Angeles, however, and much of the voice work still will be done in Hollywood.

The Canadian studio's first project, the homevideo feature "Beauty and the Beast: Christmas Belle," showcases this all-Canadian approach. The pic's director is Andy Knight, a Toronto native who's returning to his hometown to work on the film after more than a decade in the U.K. Keith Ingham, formerly the studio director for Bardel Animation in Vancouver, is the Vancouver-based associate director on the "Beauty and the Beast" video sequel, and William Speers, who just left a position at Lacewood

Turn to page 112



CANUCK STUFF: Montreal's Cinar is co-producing "The City Mouse and the Country Mouse," above, with French and German outfits, while Ottawa's Lacewood Prods. created "Katie & Orbie," a PBS show.

Canada's indies get busy

Continued from page 96

scene in Vancouver, which is home to a number of small but thriving producers, such as Intl. Rocketship Ltd.

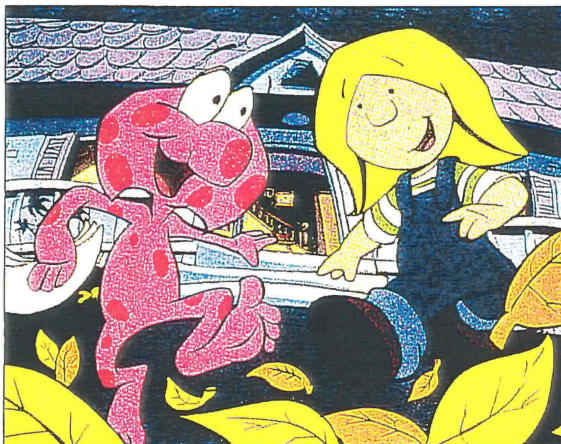
Cartoonist Gary Larson chose Rocketship to animate his 1994 CBS special "Tales From the Far Side," and the company currently is in production on a follow-up special, "Tales From the Far Side 2."

In April, the Oslo Animation Festival presented a complete retrospective devoted to Rocketship's productions, including the first "Far Side," which won the Grand Prix at 1995's Festival International du Cinéma d'Animation in Annecy, France.

Rocketship also is producing some work for Microsoft and is developing animation segments for a proposed Howard Stern cable TV special, according to Rocketship founder and director Marv Newland.

Newland says Vancouver is a real hub for animation production right now. "It's cooking," he says. "Everyone is busy on a wide variety of different work. It taxes the talent pool, but there's more talent coming into the city."

Studio B is another busy Vancouver production house, which specializes in service work for the Hollywood majors. Studio B produced eight episodes of "The Mighty Ducks" series for Walt Disney Television Animation, produced three episodes of



"Road Rovers" for Warner Bros. and did 15 episodes of "The Mask" for Film Roman.

Mediatoon, one of the new animation players in Canada, is a joint venture of Astral Programming Enterprises of Montreal and Editions Dupuis in France. The Montreal-based outfit packages Canadian-European co-prods, such as "Flash Gordon," "Carrot Top" and "Red Beard."

Some of the Mediatoon series are aimed at the U.S. and European markets, like "Flash Gordon," which already is generating interest in the U.S. Other shows, like "Carrot Top," based on a classic French book, is produced more for Quebec and French-speaking Europe.

Nelvana of Toronto is Canada's leading indie animation producer and distributor, and the company has had a major presence on the U.S. network scene for well over a decade. While maintaining its Hollywood business, Nelvana has been steadily upping its co-productions with European partners. Recent co-prods include "Blazing Dragons,"

with the U.K. and France; the series "The Neverending Story," with Germany and France; and the feature film "Pippi Longstocking," produced with companies in Germany and Sweden.

"When we went public two years ago, one of our strategies was to broaden our co-production stretch, and we've been successful at doing that," says Nelvana chairman Michael Hirsh.

Part of the Nelvana strategy has been to attempt to increase the number of co-prods with countries other than France, Canada's most frequent partner.

The National Film Board, as it has for decades, remains a key player in the Canuck animation game, producing numerous award-winning animated shorts. The NFB's animation department recently received a major boost in its public profile on the long legs of "Mission: Impossible." The NFB short "How Dinosaurs Learned to Fly," directed by Munro Ferguson, has been screening before the Tom Cruise blockbuster in more than 100 theaters across Canada.

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Characters



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GLITCH CUTTER

VIDWINDOW

ON
LINE
MARCH
1995



MEGABYTE

ReBoot™ &



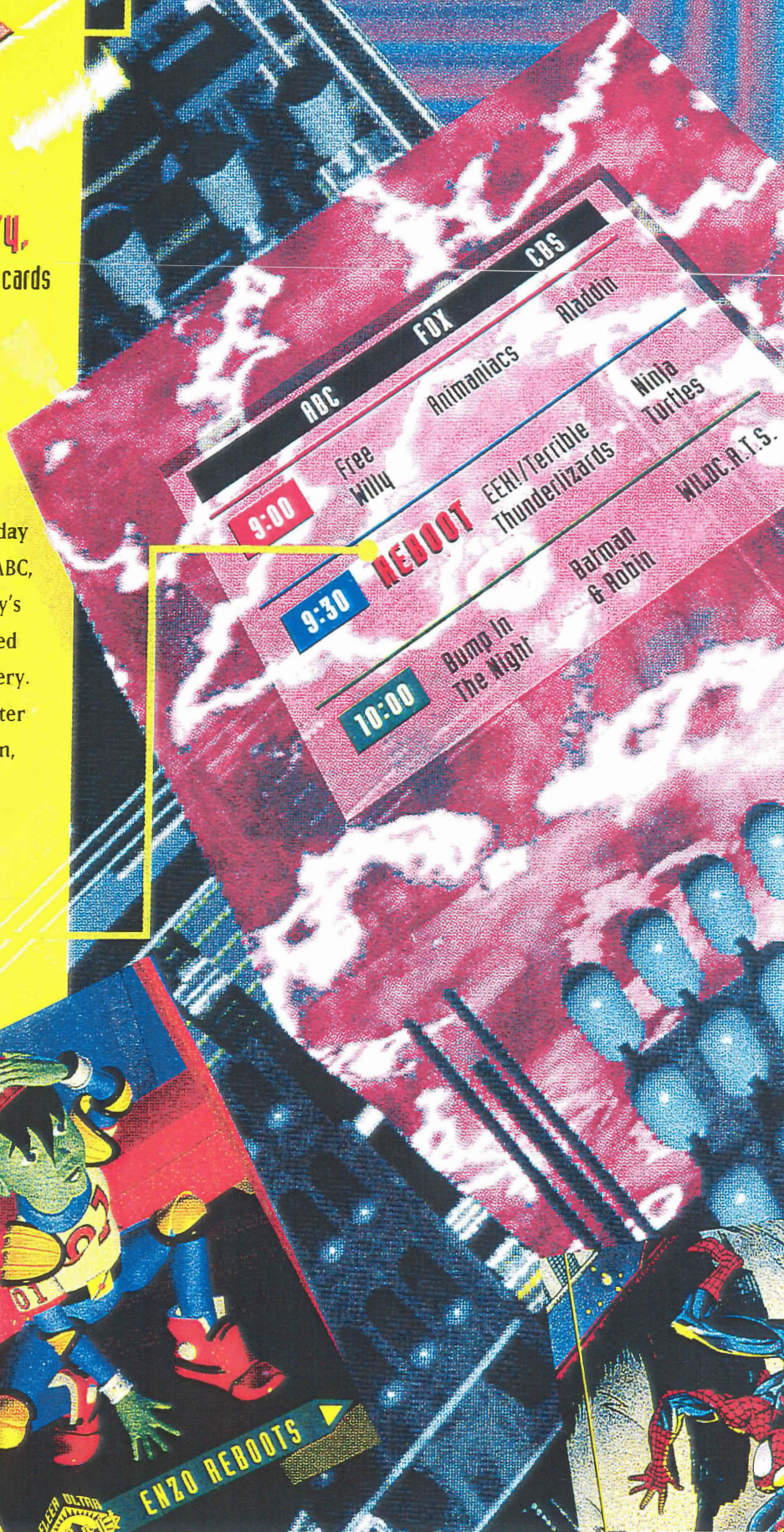
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ReBoot

FLEER ULTRA REBOOT CHECKLIST

KEY PLAYERS

- 1 DOT MATRIX
- 2 BOB
- 3 ENZO
- 4 MEGABYTE
- 5 HEXADECIMAL
- 6 FRISKET
- 7 PHONG
- 8 CECIL
- 9 HACK & SLASH

DIT PARTS

- 10 BINOMES
- 11 NIBBLES
- 12 NULLS
- 13 SMILEY
- 14 SCUZZY
- 15 CAPTAIN CAPACITOR
- 16 MR. CHRISTOPHER
- 17 PRINCESS BULA
- 18 MOUSE
- 19 PEARSON
- 20 MR. MITCHELL

GLITCH IN TIME

- 21 GRAPPLE HOOK
- 22 KEY
- 23 X-RAY
- 24 MEND
- 25 SAFETY LINK
- 26 MEDGUN
- 27 VIEWERSCOPE
- 28 ROTOR
- 29 JACK HAMMER
- 30 FLASHLIGHT
- 31 SCISSORS
- 32 SPYGLASS
- 33 POWER HAMMER
- 34 SCREW DRIVER
- 35 COMMUNICATOR

DIGITALES

- 36 BELLY OF THE BEAST
- 37 CRIMSON BINOME
- 38 ENZO THE SMART
- 39 GREAT BRAIN ROBBERY
- 40 IDENTITY CRISIS
- 41 MEDUSA BUG
- 42 QUICK & THE FED
- 43 RACING THE CLOCK
- 44 THE TIFF
- 45 THE TEARING
- 46 ... OUR SPONSOR

MEGATROUBLE

- 47 EVIL ENVOY
- 48 MEGABYTES GRASP
- 49 DEVIL AND MS.DOT
- 50 NO RIDERS
- 51 BOOGEY MAN
- 52 DOUBLE TROUBLE
- 53 TERRIBLE TWOSOME
- 54 EVIL EYES
- 55 MEGAPRIZE

VIRAL VILLAINS

- 56 HACK & SLASH
- 57 NIBBLES
- 58 TANK CAPTAIN
- 59 SCUZZY
- 60 MEGABYTE
- 61 AGENT SIX
- 62 HEXADECIMAL
- 63 NULLS

REBOOT GAMES

- 64 RUN BOB RUN
- 65 SEE DOT RUN
- 66 AMMO KEY
- 67 HAT TRICK
- 68 OLYMPIANS
- 69 COACH ENZO
- 70 NICE SHOTS
- 71 CAPTAIN ENZO
- 72 DOTS THROW
- 73 BOB PAN
- 74 TOMATO BOMB
- 75 STUCK FORMAT
- 76 PIXIE GAL
- 77 FEE-FIE-FORMAT
- 78 LEGGY FOE
- 79 SAUCED
- 80 CLOWNING AROUND
- 81 STRUNG OUT
- 82 PIE SQUARED
- 83 MAKE-UP MESS
- 84 I COULDA' HAD AN F9
- 85 HOSER
- 86 SHIFT KEY
- 87 BEARY SCARY
- 88 KILLER CLOWN
- 89 DRAGON CHASE
- 90 SIR LANCEDOT
- 91 DAMSEL IN DISTRESS
- 92 DIGITAL DOGFIGHT
- 93 FORMULA 1
- 94 RIOT CONTROL
- 95 DEAD EYE
- 96 DOT PATROL
- 97 ESCAPEE
- 98 BUTTER KNIFE
- 99 BOB'S BOB
- 100 SKULLPEDE
- 101 DOT TO DOT
- 102 DOT MERLIN
- 103 YUCK
- 104 BROTHERLY LOVE
- 105 ELFISH ENZO
- 106 JOKE ARROW
- 107 WILLIAM TELL
- 108 LIP SYNCH
- 109 CLUE GIVER
- 110 I-C-U
- 111 GOING BANANAS
- 112 SCREEN SAVER
- 113 BOOB TUBE
- 114 ADVENTURE PARTY

PROGRAM CLIPS

- 115 BOB WANTS YOU
- 116 ROCKET MAN
- 117 SOFTWARE PIRATES
- 118 ROCK STAR
- 119 IN THE BRIG
- 120 BAD HAIR DAY
- 121 OCEAN QUEEN
- 122 JAWBREAKER
- 123 GLITCH BOOTY
- 124 SWASHBUCKLER
- 125 DOWNLOADING
- 126 A BIT RUN DOWN
- 127 MISSING A BIT
- 128 GENERAL DOT
- 129 OVERLOAD
- 130 TRAPPED
- 131 FLY BOY
- 132 BUDDIES
- 133 MOUSE PAD
- 134 PRO PILOT
- 135 BRAIN SCAN
- 136 TISSUE PLEASE
- 137 ARMED AND READY
- 138 ESCAPE KEY
- 139 ENZO REBOOTS
- 140 BRAND X
- 141 MRS. ENZO
- 142 BOOT TO BE WILD
- 143 ON THE RUN
- 144 VIRAL ERASER
- 145 ATTRACTIVE
- 146 HANG TEN
- 147 QUEEN OF CHAOS
- 148 COMPUBOSS
- 149 CHECKLIST A
- 150 CHECKLIST B

NOLOGBLAST

- H1 DOT AND ENZO
- H2 ENZO AND MEGABYTE
- H3 MEGABYTE AND HEXADECIMAL
- H4 HEXADECIMAL AND BOB
- H5 BOB AND DOT

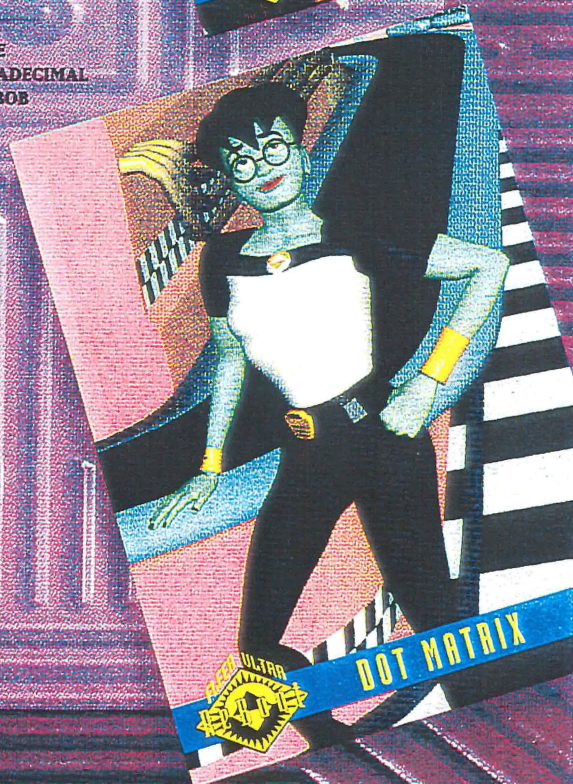
CHROMIUM

- C1 STARPLOT
- C2 INDY RACER
- C3 BEANSTALKER
- C4 CLOWN
- C5 THIEF
- C6 WIZARD
- C7 SPACE COP
- C8 KNIGHT
- C9 MARATHONER
- C10 BOMBARDIER

SUSPENDED ANIMATION

- SA1 DOT
- SA2 BOB
- SA3 ENZO
- SA4 MEGABYTE

- SA5 HACK & SLASH
- SA6 HEXADECIMAL
- SA7 FRISKET
- SA8 PHONG
- SA9 MOUSE
- SA10 CECIL & MIKE



ON LINE MARCH 1995

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Homegrown Heroes

A sampling of local favorites from around the globe



Argentina

Mi Familia es un Dibujo

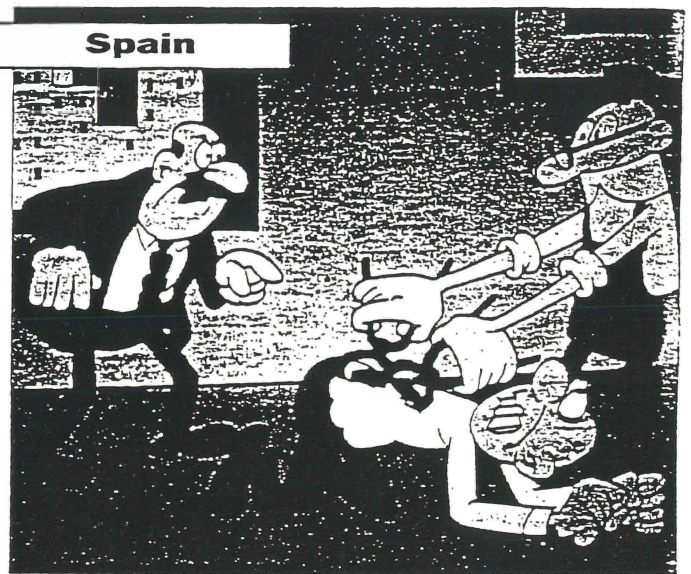
"Mi Familia es un Dibujo" (Cartoon Family) features a uniquely dysfunctional family composed of a couple with three children. Two are normal but the third, through some "genetic accident," is a cartoon character called "Dibu." A mix of live action and animation, the one-hour weekly series has snagged a strong viewership on Telefe, Argentina's leading commercial TV station.

—Anna Marie de la Fuente

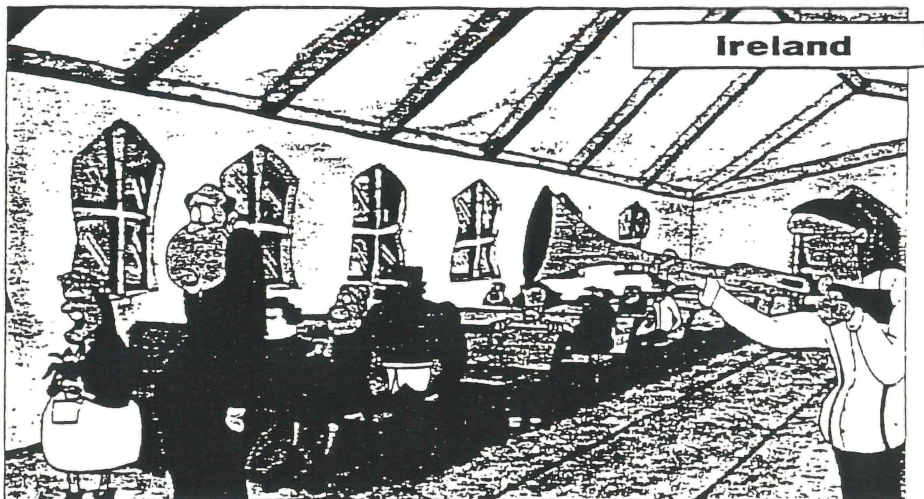
Mort & Phil

TIA agents Mort — master of disguise — and straight man Phil were created in 1958 by Jose Luis Ibáñez. By 1994, their knack for nailing the wrong guy and, generally, getting it all hilariously mixed up made them popular throughout Europe. Co-producers B.R.B. Intl., Antena 3 TV and Ediciones B already have a sequel in the works. Mort and Phil have jokingly been dubbed "traitors" for starring in a \$2-million Spanish Tax Office campaign to advise the Spanish on the importance of issuing "official" invoices. A 1997 "sales tax" saga is already brewing.

—Jose Luis Martínez



Spain



Ireland



Canada

ReBoot

"ReBoot" has spawned its own video game, collectible cards and more than 100 other merchandising licenses. Arguably the most popular character in the series, Bob is a top official in the fictional city of Mainframe, protecting and defending other elflike sprites in the digital world.

—Eian Vlessing

Peig

Local heroes are not easily created in this small country, where U.S. animation is tremendously popular. The closest thing to it would be "Peig," the first series produced by Brown Bag Films. Although never seen outside of Ireland, it is unique in that it's an Irish story made by Irish animators for an Irish audience. Commissioned by RTE, "Peig" was a satire based on a woman who wrote a book that every Irish child was forced to learn in school and subsequently hated.

—Leanne de Cerbo

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The Los Angeles Times

"BEST NEW CARTOON...
IT'S AMAZING TO THINK THIS ART IS MACHINE MADE."

TV Guide



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The Animation Fan's Magazine

Voice Actor Mania



61

Interviews with Jess Harnell and Jackson Beck

The Dave Weber/Danny Webb Mystery

Plus: A No-Holds-Barred Review of 1995-96 Television Animation

Disney Author Charles Solomon Interviewed

Academy Award Nominated Animator John Dilworth Profiled

WHAT HATH REBOOT WROUGHT?

An interview with producer Chris Brough

by Gord Wilson

GW: Where did the original idea for *ReBoot* come from?

CB: The idea of *ReBoot* came from four special effects folk out of London: John Grace, Ian Pearson, Gavin Blair, and Phil Mitchell, collectively known as The Hub. Ian and Gavin later created the characters for Dire Strait's music video, "Money for Nothing."

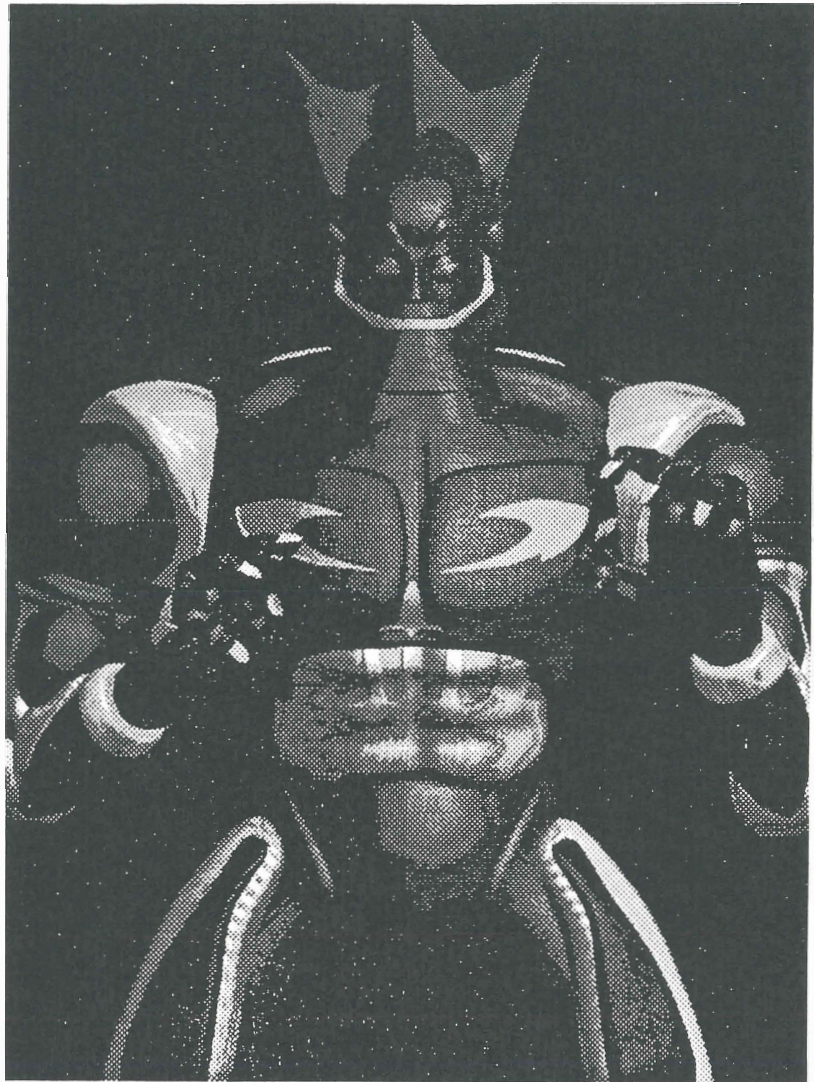
At the time, they had done a series of tests in computer animation, about seven years ago, which were rather low rez, because the technology was really in its infancy. I was having dinner in London with Jim Henson, whom I'd worked with over the years, and he mentioned this concept, and subsequently sent me a tape. I thought the idea was excellent. The tape didn't look that great: from the perspective of today, it was really moving golf balls, but certainly the idea of creating a TV series for kids set inside the world of computers, creating therefore a window of technology, was a compelling idea. We joined forces, and seven years later, here we are.

GW: What's your background, Chris?

CB: Long, hard, and varied. I've been producing film and television for about 25 years. I started producing rock and roll films. I was involved in the production of *Ladies and Gentlemen: The Rolling Stones*, *Imagine*, with John and Yoko, a couple of Alice Cooper pictures, a lot of television stuff. During this time I also produced a kids' series about twenty years ago on PBS. That interested me in getting involved with kids. I developed *The Adventures of Teddy Ruxpin* for television, and produced 65 episodes. I've been involved in about 25 television series: *Where's Waldo*, *Super Mario Brothers*, *Benji* lots of specials.

About 1979, I was offered to head up prime time development for Hanna-Barbera studios in Hollywood. "Great job," I thought, so I went there and ran primarily the live-action department: *Movies of the Week*, some *After School Specials*, a series called *Going Bananas* on NBC. In the process, I got more and more involved in the development of animation, and it fascinated me. I also realized it's a wonderful business, not only from a creative standpoint, but frankly, also as a business.

If you'll look at the leading studios in the world today, most of them are family entertainment-oriented. It's a replenishing market. Children basically replace themselves as a market every five years. With animation,



ReBoot™ & 1995 © Mainframe Joint Venture

the shows you create are empowered by an architecture of dreams. You don't have budgetary constraints on how big of a house you draw—or how large a city.

GW: Pixar, with *Toy Story*, has certainly shown there's an audience for computer generated animation. But you've generated considerably more Computer Graphics Imagery (CGI) for *ReBoot*.

CB: We were very pleased with the success of *Toy Story*. First of all, I think the story was excellent, and the animation looked good. *Toy Story* was about 80 minutes of CGI; last year we produced 500 minutes of CGI at this facility. To give you a point of reference, that 500 minutes was greater than the sum total produced by all CGI facilities in the history of the technology in the world.

GW: What does it take to do all that?

CB: We have 75 Silicon Graphics workstations—platforms using primarily Softimage in combination with our own proprietary software. We have six in-house software developers who work literally seven days a week, not only debugging current software, but creating new software to empower our animators to work a little more easily. We're really giving them authoring tools that are easier to manage.

GW: Will you eventually market your software, as Pixar did theirs?

CB: We've discussed this internally. We will probably come to the point where we will sell some of the software. At the moment, it gives us a decided advantage. If you look at a span of episodes from show one up to what we do today,

I think you'll see a tremendous growth curve in our ability to animate, and to manipulate this imagery. This is due, in large part, to our software developers, as well as the increasing experience level of our animators.

The first episode took about 17 weeks to produce; the last episode took us 18 days. We build this huge backlog of sets, props, characters, and models which we draw upon. As Lou Scheimer used to do at Filmation in the '70s, you'd see the same backgrounds in three different shows. We have the ability to do that, but also to manipulate the imagery by lighting, painting, and resurfacing, so it doesn't look the same. We're building the backlot of a studio in a suitcase.

GW: *Tron* had 1/5 of it computer generated.

CB: *Tron* was a very interesting, courageous production. I liked it very much; I think everyone here is a fan of it. But it cost 40 million dollars to do that in 1979. And I'm not so sure that kids want to see real people hanging around inside a computer. The idea of hanging around a fantasy is to keep the elements of a fantasy intact.

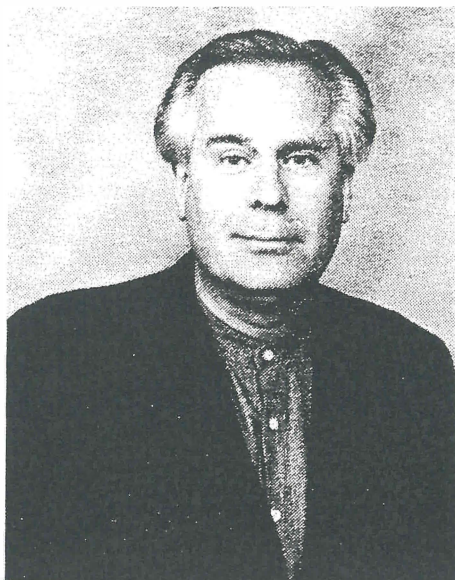
I'll give you an example. Years ago, I worked at Hanna-Barbera as an executive producer. We were making a very successful series called *The Smurfs*. One year it was decided to put two human kids inside the world of the blue people, and the ratings started looking like the Hindenberg approaching the shores of New Jersey, in a very short period of time. It was realized, albeit a little late, that this burst the bubble for kids. Suddenly human beings were invading this wonderful idea that was sort of sacrosanct. The moment they pulled the kids back out, the ratings conversely rose again. Bearing this in mind, you'll never see a human being inside *ReBoot*. This is a magic world that takes place inside a kid's personal computer, and we don't really want to mess with that.

GW: *ReBoot* doesn't seem like it's only for kids.

CB: No, it's not. I think *The Simpsons* proved, once and for all, that animation will reach a broader audience. If you sit in a theater and watch a Disney movie, you'll get some idea of the draw. And it's not just adults accompanying kids. A lot of adults come in alone, because they're drawn to a wonderful world that you unveil to them. *ReBoot* is designed as a family vehicle. It's written on many levels.

One of the primary mistakes I think a lot of creators of children's entertainment make is to write down to kids. Kids are midget adults by the time they're six. They're not sophisticated; fortunately they still have some innocence left—but by six they're as intelligent as you and I. So to give them stories that are watered down, boring, dumb, or plain stupid is not doing anyone a service.

What we try to do with *ReBoot* is to write on many levels. We have something for



ReBoot Producer Chris Brough

everyone. Kids like a sense of discovery. The average viewing pattern of a kids' videocassette is 33 viewings. That's a lot of times to sit through the same tape. But they like to master a sense of knowledge. They like to know what's coming up, it empowers them to have a sense of mastery.

GW: *What sort of feedback are you getting?*

CB: We have a web site, and at times we get as many as 3,000 hits a week. We use this for raw audience data, and study the stuff very carefully to see what seems to touch an audience. People like Dot and Hexadecimal—these are sexy, strong characters. They're also very funny characters.

GW: *I like Frisket.*

CB: Frisket's great. Frisket's a feral dog. He kind of tolerates Bob and Dot, but the only person he really likes a lot is Enzo. But we realized that Enzo was this 12 year-old kid running around in cyberspace with no friends. So we created AndrAIa to give him someone to kind of bounce off of (the AI stands for Artificial Intelligence). This season you'll see a maturation of the relation between Enzo and AndrAIa, which is basically prepubescent going into young teens. As the characters learn more about the world around them, so we learn more about the characters, and the audience will grow with them. There's a constant sense of self-discovery and exploration we try to imbue in all our characters.

GW: *How about merchandising?*

CB: We have about 80 licensees, ranging from watches to bedding, washcloths and soap. Irwin has made a very successful toy line for us—we're the best-selling toy in Canada. The data base created from *ReBoot* is a digital asset. How can we afford to make a show like *ReBoot*,

which is obviously not cheap to produce? One reason is we use the same data base to create our toys. If you look at our toys, they are exact replicas. The second tier of Irwin toys are phenomenal—they're cut directly from the data base.

The Fleer trading cards came off our data base, and we have a new comic book coming out from Marvel—one of the first digitized comic books ever. We have phenomenal games coming out for all platforms—CD ROM, Mac, IBM, Sony Playstation and Sega Saturn. The video product will be unveiled at the E3 show in May in Los Angeles.

We're using the data base to explore in cyberspace, which gives you an incredible amount of movement and imagination, and hopefully will change the look and face of what interactive games are about. We're creating interactive television product, where you can actually go and explore inside Mainframe. So in essence, we've created a virtual reality studio here.

GW: *What's the future for ReBoot?*

CB: We started *ReBoot* three years ago in a Vancouver hotel room, and now have close to 50,000 square feet of studio space. We have the highest output CGI facility in the world, for fully-rendered, long-form animation. *ReBoot* is currently the Saturday morning flagship series for ABC in the US.. In Canada, it runs on YTV three times a week: twice at 7:30 and Sundays at noon. YTV is sort of a Canadian Nickelodeon, and the highest-rated show in its history was a *ReBoot* episode that had run 11 times. The last four episodes of season two tied together in a 90 minute story. Lots of changes are coming in season three, based on what the audience has been telling us they want to see. The last episode of season two gives an idea of the changes coming in Mainframe.

We're kind of building cult status among our viewership. In January, the show launched in 40 countries. Videos came out on Polygram this fall, with two shows per tape, but a lot of people videotape it. We suspect thousands of people are videotaping it. We're writing a script for a movie, and in Canada, a theatrical trailer is currently running on 750 screens across the country. Cineplex-Odeon theaters open with a two minute teaser *ReBoot* clip, a subtle message saying "watch this space, coming soon."

GW: *What other projects are in the wraps?*

CB: I'm president of BLT, a company I created about eight years ago in Vancouver. We joined forces with Alliance Communications to produce *ReBoot*. Mainframe Entertainment is a new company that will be taking over the *ReBoot* responsibilities. We've also just taken on 26 episodes of CGI for a new series we're doing for Kenner-Hasbro called *Beastwars*.

They felt the nature of *Beastwars*, which is derivative of the original *Transformers*, would be more vivid and compelling if they put it into 3D CGI. Kenner has elected to transform the *Transformers* idea, if you'll excuse the pun,

into creatures which are organic, which I think is very clever. The show will deal with animals and insects transforming, from time to time, into robots. It's a pretty adventurous and demanding undertaking; we just started last

December. Everyday is a new experience for us. It's kind of mind-boggling. But we have a saying around here. We kind of like the future, because we think we're going to be living in it.

ReBoot Redux: An Episode Guide to the first two seasons:

First Season:

Episode #1, Show 9402: The Tearing A game of Starfighters turns a Tear into a Portal. Megabyte takes Bob hostage in an attempt to enter the Super Computer.

Episode #2, Show 9401: Racing the Clock Megabyte tricks Bob into delivering a delete command disguised as a mask to Hexadecimal. Dot and Enzo enter a high-speed racing game to save Bob from deletion.

Episode #3, Show 9403: The Quick and the Fed: When Dot is partially erased by a magnet, Bob must battle through a game of Knights and Castles to obtain "slow food" from the mean streets of Mainframe, Phong's prescription for Dot.

Episode #4, Show 9405: The Medusa Bug When Hexadecimal tricks Megabyte into releasing her viral Medusa Bug, only Bob is immune. The Guardian travels to Lost Angles to engage her in a battle of wits.

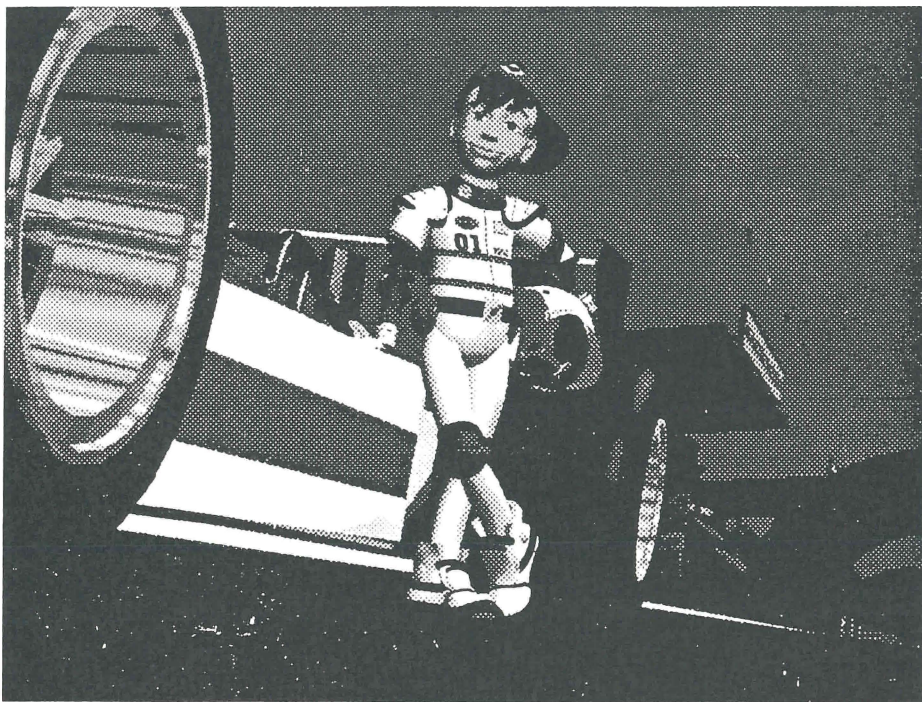
Episode #5, Show 9404: The Tiff When Bob and Dot won't stop arguing, Enzo stages his own kidnapping, but a game cube descends, and they find themselves trapped in Starship Alcatraz, where they must stop the User's convict from escaping.

Episode #6, Show 9408: In the Belly of the Beast: Frisket swallows an unformat command and gets sick as a dog. Megabyte dognaps Frisket, but his henchmen, Hack and Slash, prove no match for Enzo and his feral fido.

Episode #7, Show 9414: The Crimson Binome Pirates begin off-lining Mainframe, trapping binomes and sprites, and looting software. An energy-sea battle ensues, and Dot must use all her cunning to rescue captured Guardian Bob.

Episode #8, Show 9411: Enzo the Smart Enzo slows down the clock speed of Mainframe from 32 bit to 8 bit, so that he will be smarter than Bob, but gets stuck on a game team with the basic versions of Bob and Dot against four athletic Users.

Episode #9, Show 9410: Wizards, Warriors & a Word... Bob and Dot can't shut off babbling Mike the TV, when a Dungeon game descends,



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and the TV reboots as Mike the Mighty Warrior.

Second Season:

Episode #10, Show 9406: The Great Brain Robbery: Megabyte shrinks secret agent Mouse so she can invade Bob's brain, and gain access to the Super Computer, but she enters Enzo's brain instead. When miniaturized Bob also enters, they team up, racing to get out before returning to full size.

Episode #11, Show 9416: Talent Night When Dot auditions acts for a surprise party for Enzo on his first upgrade, Bob and Megabyte bring down the house with a battle of the bands.

Episode #12, Show 9415a: Identity Crises: Part One: Dot and Bob are helping Cyrus and the binome resistance against Megabyte, when Dot loses her organizer. Meanwhile, Megabyte congratulates his double-agent, Cyrus, as the dreaded Funhouse game cube descends.

Episode #13, Show 9415b: Identity Crises: Part Two: Phong shows Dot the alternative future that will ensue if she loses the game: a Mainframe where Enzo is a thug and Bob a pet null. Convinced "it's a wonderful life," she returns to the game, determined to defeat the User.

Episode #14, Show 9501: Infected Mainframe powers down when a file upgrade command descends, but resident binomes are horrified when it fails to power up again. Megabyte kidnaps Phong, and double-crosses Hexadecimal after the two Viruses agree to divide the city. Bob and Dot eject Megabyte from a self-destruct program to save Mainframe. The evil Virus vows to return.

Episode #15, Show 9503: When Games Collide Megabyte's tampering causes two games to fuse and descend at once, and Bob must fight both military manpower and prehistoric pteradactyls. When Bob saves Megabyte, the Virus calls off his troops; he and the Guardian are even until next time.

Episode #16, Show 9502: High Code When a mysterious Stranger comes searching for Talon, Bob must defeat him in a Wild West game to save Enzo. Talon turns out to be Old Man Pearson, who defeats the Stranger in his data dump.

Episode #17, Show 9505: Bad Bob Bob reboots in a road warrior-style game to battle Megabyte, transformed into a tanker truck, who has stolen

the Core energy. Aided by Enzo and Dot, he must battle both the User and Megabyte to restore the energy before the game ends.

Episode #18, Show 9504: Painted Windows Hexadecimal steals the System Paint Program, recreating Mainframe in her own chaotic style. Joined by Mike the TV, Bob battles a giant version of Scuzzy in Lost Angles, while Dot, Enzo and Frisket rush to save the city.

Episode #19, Show 9509: AndrAla (aka Enzo's Friend): Embarking on an undersea adventure, Enzo meets and befriends AndrAla, a game sprite. Realizing she will disappear when the game ends, Enzo is loth to win the game. She knocks him out, winning it herself, and Bob finds a way to bring her to Mainframe.

Episode #20, Show 9508 (part 1): Nullzilla Hexadecimal's mirror breaks, infecting her with a strange creature. Mainframe's Nulls all swarm towards the noir Hexadecimal, all in black. Mike the TV names the new menace "Nullzilla," and Bob, Dot, Mike, Enzo and Frisket transform into a giant robot to battle the monster. When they forget the robot's crucial weapon, it's up to AndrAla to save the day.

Episode #21, Show 9506 (part 2) Gigabyte: The infection spreads to Megabyte, who joins with Hexadecimal to become the mega-Virus, Gigabyte. Bob uses Glitch to split Gigabyte back into Megabyte and Hexadecimal, but a third creature escapes into the lower levels of mainframe.

Episode #22, Show 9507 (part 3): Trust No One (aka Energy Vampire): A vampire-like creature



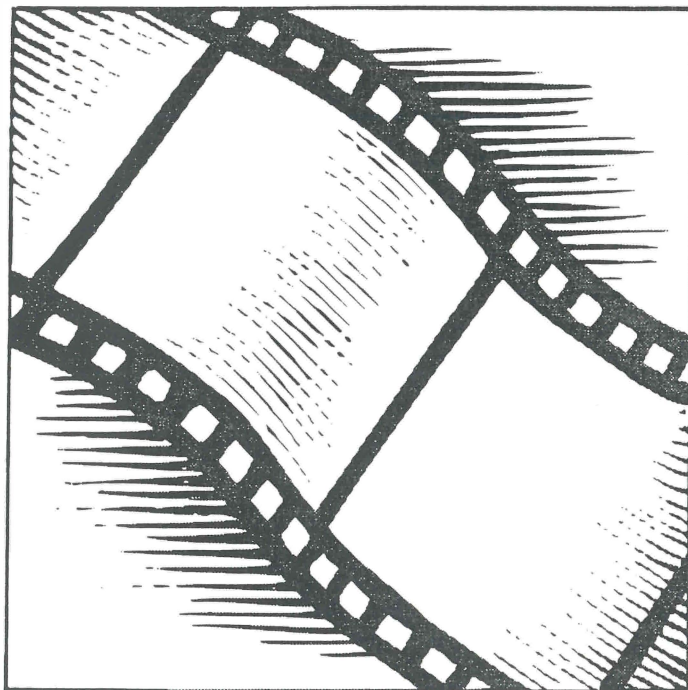
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is preying on binomes and sprites, and Mouse is suspect. The real culprit is a Web Creature, discovered by agents Fax Modem and Data Nully. Turbo, the Head Guardian in the Super Computer plants a Global Erase Command on Mouse, planning to delete Mainframe. The Web Creature creates a Portal for the Web to invade, and Mainframe prepares for war.

Episode #23, Show 9510 (part 4): Web World Wars: Bob enlists his arch-enemies, Megabyte and Hexadecimal, to fight the Web, the dangerous alternative system to the Net. After

a protracted aerial war, Megabyte seizes Glitch and fires Bob through the portal. As Megabyte and Hexadecimal wreak havoc on Mainframe, only Enzo, deputized as a Guardian, dares to defy the Viruses.

Gord Wilson is a West Coast-based freelance writer who interviewed Frank Thomas and Ollie Johnston in the last issue of ANIMATO!. He included the ReBoot Home Page address for fans who'd like to link up with the show in cyberspace (<http://alliance.indirect.com>).



Special Congratulations To Oscar Recipients

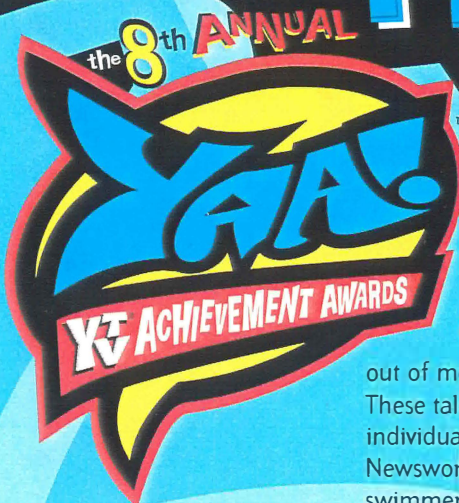
Chuck Jones

John Lasseter

Nick Park

CIBC
PRESENTS

ROCK WITH YAA! AND THE BACKSTREET BOYS



Production is currently under way for the **8th Annual YTV Achievement Awards** to be held in Toronto April 27. Hot new musical group The Backstreet Boys is confirmed as the headline act.

YAA! announced the finalists for the awards on January 31st, with the selection committee choosing 152 finalists out of more than 1,300 nominations received from across Canada. These talented and enterprising young people were judged in their individual categories by accomplished Canadians like CBC Newsworld anchor Alison Smith; performer Michael Burgess; swimmer Vicki Keith Munro; and lead singer of The Barenaked Ladies, Steve Page.

The **YTV Achievement Awards** are open to anyone 19 years of age or under who has achieved something great in one of 15 categories.

For the first time this year, YTV welcomes a presenting sponsor for the awards. **CIBC presents YAA! The 8th Annual YTV Achievement Awards.**

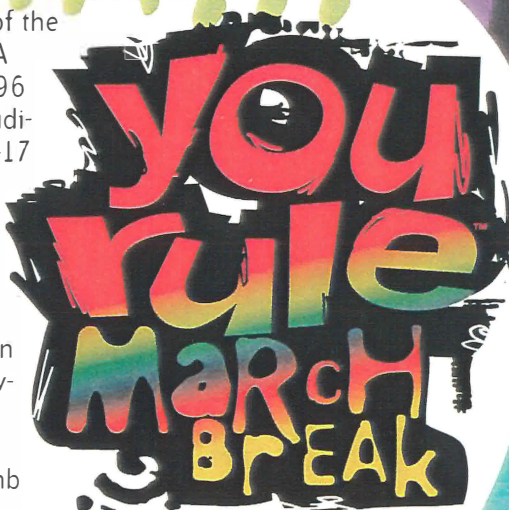
YAA! will be telecast live Sunday, April 27th at 7 p.m. (E/P) from the Metro Toronto Convention Centre in Toronto.

YTV BREAKS ALL THE RULES..

It's year three of YTV's "You Rule March Break" and, once again, YTV viewers are in control of our program schedule. Every day during the week of March 10th to 15th, viewers can call our 1-888 line and vote for their favourite show. We'll air three back-to-back episodes of the winning show each evening. A growing phenomenon, in 1996 the **You Rule March Break** audience grew 42% for Teens 12-17 and 18% for K2-11 over 1995 figures. Never satisfied with the status quo, YTV has taken **You Rule March Break** out of the box and onto the slopes of Blackcomb Mountain in Whistler B.C. to cover Snowboard Canada Jam '97. On Saturday, March 15, YTV will broadcast live from Blackcomb featuring interviews with top snowboarders and YTV personalities, as well as a slope-side concert by Our Lady Peace.

Presenting sponsors Cadbury Mini Creme Eggs and General Mills Golden Grahams also participated in a four week pre-promotion campaign.

Plans for our next events, Slam City Jam '97 (the North American skateboarding championships) and YTV's **PsykoBlast II** (Year 2 of the summer's hottest event) are under way. For sponsorship involvement details, contact your YTV National Sales Account Executive by calling Lisa at 530-5150.



YTV's Hottest Shows

A top 5 list based on viewers 2+ nationally*

1. **Beasties**
2. **ReBoot**
3. **Charlie Brown**
4. **Goosebumps**
5. **Are You Afraid of the Dark?**

*Source: Nielsen Media Research, 18 weeks ending Dec. 15, 1996

YTV is in the Gold AGAIN!!

The prestigious New York Festivals Competition nominated YTV for five On-Air Promotion awards and one for television production.

The gold was awarded for Best News Promotion for the Move YA/Speed promotion spot for YTV News!

